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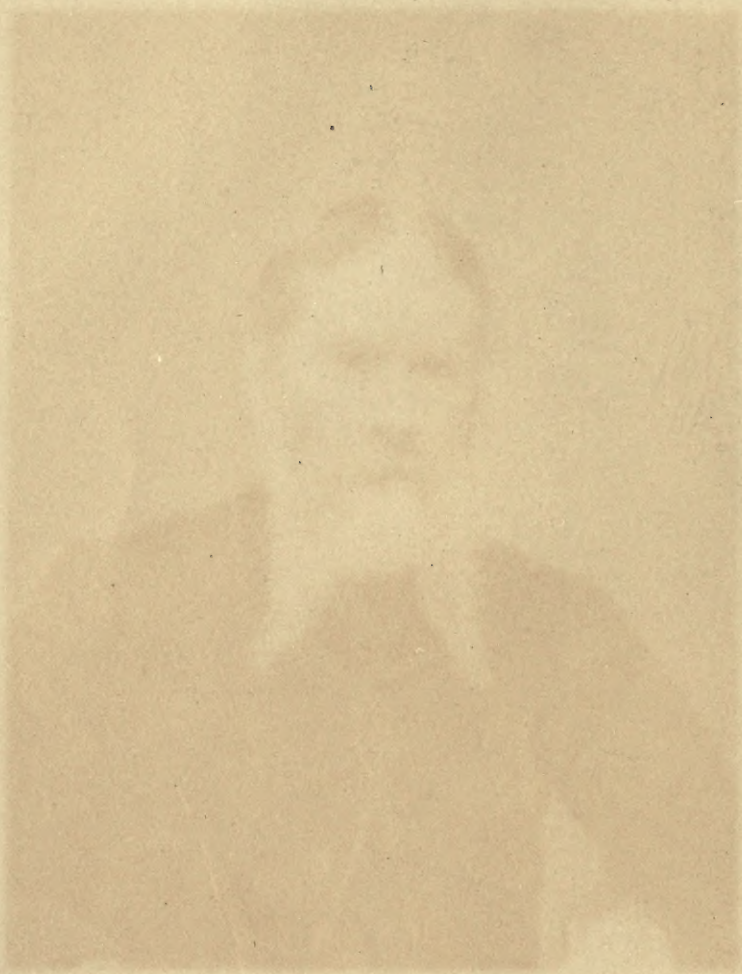
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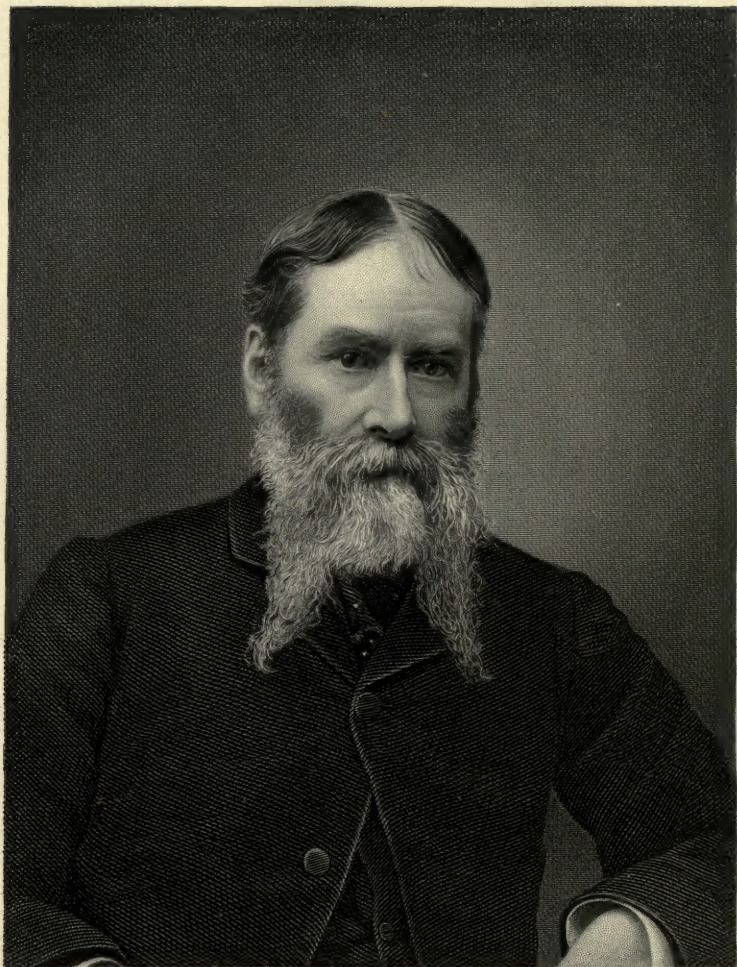
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APPLETONS'
ANNUAL CYCLOPÆDIA
AND
REGISTER OF IMPORTANT EVENTS
OF THE YEAR
1891.

EMBRACING POLITICAL, MILITARY, AND ECCLESIASTICAL AFFAIRS; PUBLIC DOCUMENTS; BIOGRAPHY, STATISTICS, COMMERCE, FINANCE, LITERATURE, SCIENCE, AGRICULTURE, AND MECHANICAL INDUSTRY.

NEW SERIES, VOL. XVI.

WHOLE SERIES, VOL. XXXI.

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NEW YORK:
D. APPLETON AND COMPANY,
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1892.

PREFACE.

PERHAPS for American readers the most interesting article in this volume is that on the "Navy of the United States," written by a naval officer. It is supplementary to the similar article in the "Annual Cyclopædia" for 1888, and comes down to date with a complete description of our naval force, actual and building. In the articles on Chili and the United States the reader may see how near we came to having use for a powerful navy in the year 1891. The census article of 1890 is supplemented by another in this volume, showing the results of the latest compilations at the Census Office; and the articles on such States of the Union as have any considerable colored population contain tables showing census by races.

The Canadian articles are illustrated with a double-page colored map of the Northwest Provinces, which with the map of the Maritime Provinces in the volume for 1889, and that of Ontario in the volume for 1890, covers all of British North America except the province of Quebec.

The article "Cities, American, Recent Growth of," describes sixty-four cities, some of which have sprung up in the wilderness within two or three years. An article on the "Earth, Area and Population of," gives the latest computations of the geographers.

The approaching anniversary of the discovery of the continent is noted by an interesting illustrated article on "Columbus's First Landfall," as well as by the description, under "United States," of the preparations at Chicago for the great World's Fair. How the question of participating in that enterprise was debated in some of the States, and what has been done by each, may be read in the State articles.

The recent advances in photography are set forth by Alexander Black, an enthusiastic photographer and student of the art. Ballooning as it is to-day is described by Prof. Samuel A. King, the most experienced of American aeronauts, who has made three hundred ascensions. The efforts to produce rain by artificial means are detailed under that title by Col. Charles L. Norton; and many things in the way of material improvements will be found under the title of "Patents."

In the way of moral reform much, it is hoped, has been done by the legislation in many States requiring temperance education in the public schools; and a history of the movement is contributed to this volume by the Rev. Joseph Cook, the well-known lecturer. The student of literature will find much to

interest him not only in the regular literature articles, but in the special articles on Lowell, Lytton, and Melville, the discussion of "New Dictionaries," by Prof. March, and the description of Oahspe, the Spiritualist bible; and the student of art will, of course, turn to "Fine Arts in 1891."

Among the regular articles of interest and importance are: In science, "Astronomy," "Chemistry," "Physiology," "Physics," "Metallurgy," "National Academy of Science," and the account of meetings of the several "Associations for the Advancement of Science"; in religion, those showing the year's growth in the various churches; in finance and commerce, the "Financial Review of 1891," "United States Finances," "Commerce and Navigation of the United States," and the treasury and debt statement in articles on various countries.

Among the special articles not already mentioned, "Archæology," "Farmers' Congress," "Hudson River, Improvements in," and "Manual Training" are noteworthy. The personal articles include, besides the three authors mentioned above, one on Speaker Crisp, of the United States House of Representatives, one on Gen. Sherman, one on Gen. Johnston, one on Jules Grévy, one on Gen. Von Moltke, one on Sir John A. Macdonald, one on Meissonier, the painter, and an unusually large group of sketches—under the title "Obituaries"—of eminent men who passed away during the year. The dead of the year 1891 include Carl I, of Württemberg, Kalakaua I, of Hawaii, Pedro II, of Brazil, and Tama-sese, of Samoa—besides the two ex-Presidents, Balmaceda, of Chili, and Grévy, of France; the princes Baudouin and the two Bonapartes; the statesmen, Parnell, Earl Granville, Bradlaugh, W. H. Smith, Windthorst, Sir John Macdonald, Madhava Rao, Hannibal Hamlin, Windom, and J. E. McDonald; the clergymen, Freppel, Magee, Rotelle, Simon, Crosby, Gilmour, Loughlin, Preston, and Wadhams; the authors, Kinglake, Lytton, Boisgobey, the two Lowells, Lossing, and Parton; the inventors, Lebel, Hobbs, and Maynard; the soldiers, Sherman, Johnston, Moltke, Boulanger, Connor, and Sibley; the naval officers, Porter, Carter, Pattison, and Ingraham; the players, Barrett, Florence, Sullivan, Fisher, Edwards, Emmet, Emma Abbott, and Mrs. Forrest; the artists, Meissonier and McEntee; the scientists, Leidy, Le Conte, Winchell, Hilgard, and Ferrel; the philanthropists, Pratt, Mrs. Stuart, and the Duke of Devonshire. Other interesting characters, in themselves or in their circumstances, here sketched are P. T. Barnum, Mrs. Hopkins-Searles, Mrs. Polk, Madame Blavatsky, Albert Pike, Charles Devens, Thomas J. Conant, and Samuel D. Burchard.

The illustrations are more numerous than in any other volume of the series. They include two colored plates, besides the large map, three fine engravings on steel, and an unusual number of vignette portraits in the text. Pains have been taken to profit by the suggestions of those who habitually use this series for reference to improve the regular articles in some details, and it is hoped that the present volume will exhibit an advance in keeping with the time.

NEW YORK, *April 19, 1892.*

CONTRIBUTORS.

Among the Contributors to this Volume of the "Annual Cyclopædia" are the following :

Oscar Fay Adams.

FOTHERGILL, JESSIE,
HOUGHTON, GEORGE W. W.,
LEFROY, EDWARD C.,
LOWELL, ROBERT T. S.,
PLUMPTRE, EDWARD H.

Mrs. Florence E. Angle.

XYLOPHONE.

George N. Babbitt.

NEW BRUNSWICK.

F. N. Bemis.

MEADVILLE, PA.

Marcus Benjamin, Ph. D.

ASSOCIATIONS FOR ADVANCEMENT OF SCIENCE,
COLUMBUS'S FIRST LANDFALL,
LE CONTE, JOHN,
LEIDY, JOSEPH,
NATIONAL ACADEMY OF SCIENCES,
NEW YORK CITY,
SOUVENIR SPOONS,
and other articles.

Alexander Black,

Of Brooklyn Times.

PHOTOGRAPHY, RECENT IMPROVEMENTS IN.

J. H. A. Bone,

Of Cleveland Plaindealer.

OHIO.

Arthur E. Bostwick, Ph. D.

PHYSICS.

Charles B. Boyle.

BINOCULAR VISION (in PATENTS).

R. Calvert,

Secretary of La Crosse Board of Trade.

LA CROSSE.

Thomas Campbell-Copeland.

UNITED STATES CENSUS.

James P. Carey,

Financial Editor of Journal of Commerce.

FINANCIAL REVIEW OF 1891.

John D. Champlin, Jr.,

Editor of "Cyclopedia of Painters and Paintings."

FINE ARTS IN 1891.

Hon. Benjamin F. Clayton.

FARMERS' CONGRESS.

P. Brainerd Cogswell,

Of Concord Monitor.

CONCORD, N. H.

Rev. Joseph Cook.

TEMPERANCE INSTRUCTION.

Austin E. Ford,

Editor of Freeman's Journal.

ROMAN CATHOLIC CHURCH.

Prof. C. W. Foss,

Of Augustana College.

HASSELQUIST, TUVE N.

Rev. William E. Griffis, D. D.,

Author of "The Mikado's Empire."

COREA,

JAPAN.

George J. Hagar,

Of New Jersey Historical Society.

OBITUARIES, AMERICAN.

Col. Pierce S. Hamilton,

Of Canadian Census Office.

DOMINION OF CANADA,

MACDONALD, SIR JOHN A.,

MANITOBA,

ONTARIO,

QUEBEC,

and other Canadian articles.

Rev. Moses Harvey,

Author of "Text-Book of Newfoundland History."

NEWFOUNDLAND.

Ripley Hitchcock,

Author of "Etching in America," etc.

MEISSONIER, J. L. E.

Rev. George T. Houck,

Secretary of Diocese of Cleveland.

GILMOUR, ROBERT.

Frank Huntington, Ph. D.

AFGHANISTAN,
BELGIUM,
BRAZIL,
CAPE COLONY,
CHINA,
EARTH,
FRANCE,
GREAT BRITAIN,
RUSSIA,
and other articles.

Laurence Hutton,

Author of "Plays and Players."

BARRETT, LAWRENCE,
FLORENCE, WILLIAM J.

Dr. Abram S. Isaacs,

Editor of Jewish Messenger.

JEWS.

Mrs. Helen Kendrick Johnson.

LOWELL, JAMES RUSSELL,
LYTTON, EARL OF.

Julius D. Johnson,

Editor of Kokomo Tribune.

KOKOMO.

Prof. Samuel A. King,

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BALLOONING.

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ARCHÆOLOGY,
BAPTISTS,
CHRISTIAN ENDEAVOR,
METHODISTS,
SALVATION ARMY,
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Prof. Francis A. March, LL. D.,

Author of "Philological Study of the English Language."

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Frederick G. Mather.

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CITIES, AMERICAN; RECENT GROWTH OF,
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PATENTS,
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Rev. Solomon E. Ochsenford.

LUTHERANS.

Mrs. Evangeline M. O'Connor.

MISSOURI,
MONTANA,
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SOUTH DAKOTA,
VERMONT,
and other articles.

George S. Parker,

Superintendent of Schools, Chippewa Falls.

CHIPPEWA FALLS.

William O. Pratt,

Of Pratt Institute, Brooklyn.

PRATT, CHARLES.

Thomas B. Preston.

PARNELL, CHARLES STEWART,
PRESTON, THOMAS SCOTT,
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and other articles.

Helen Ainslie Smith,

Author of "Wonderful Cities of the World."

MANUAL TRAINING.

William Christopher Smith.

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CALIFORNIA,
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NEBRASKA,
NEW HAMPSHIRE,
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and other articles.

Rev. Jesse A. Spencer, D. D.

LITERATURE, CONTINENTAL,
PROTESTANT EPISCOPAL CHURCH.

Arthur Stedman,

Editor of reissue of Melville's works.

MELVILLE, HERMAN.

Thomas H. Stevens,

Rear Admiral (retired) U. S. N.

PORTER, DAVID DIXON.

Lewis Swift, LL. D.,

Director of Warner Observatory.

ASTRONOMICAL PROGRESS IN 1891.

J. Kendrick Upton,

Of United States Census Office.

UNITED STATES, FINANCES OF THE.

Lewis S. Van Duzer, U. S. N.

NAVY OF THE UNITED STATES.

William J. Youmans, M. D.,

Editor of Popular Science Monthly.

CHEMISTRY,
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THE ANNUAL CYCLOPÆDIA.

A

ABYSSINIA, an empire in eastern Africa. The present sovereign, called the Negus, is Menelek II, formerly King of Shoa, who proclaimed himself Emperor of Ethiopia on the death of Johannes, who was killed in a battle with the Soudanese dervishes in 1889. The country is ruled by feudal chiefs, who pay taxes and owe military service to the Emperor. There is an ancient code of law which sets limits to the royal prerogative. The Negus maintains a mercenary army independent of the retainers of his vassals, which he has armed with modern rifles.

Area and Population.—The area of the Empire of Abyssinia, or Ethiopia, is estimated at 244,000 square miles, embracing the kingdoms of Tigré, Lasta, Amhara, and Gojam, forming Abyssinia proper, the Kingdom of Shoa, the coast lands of Danakil, the territory of the Issa and other tributary Somali tribes, and the dependencies of the Bogos, Mensa, Habab, Beni-Amer, and other subject tribes in the north. The total population is estimated at 7,360,000. The inhabitants of Tigré, Amhara, and Shoa, who are the conquering and ruling element, are the Ethiopians, of Semitic origin, emigrants in early times from Arabia. They were converted to Christianity in the fourth century, and still practice the rites of the Alexandrian Church. The *abuna*, or head of the national Church, receives investiture from the Coptic Patriarch of Alexandria. The name Abyssinia is derived from the Arabic designation of the people, *Habash* ("mixed"), indicating the various intermixtures of Arabian, Hamitic, and negro blood that are found in different parts of the country.

Education is in the hands of the clergy, who instruct a limited number of children in choral singing, recitations from the Bible, grammar, and poetry. The ceremonial of the Abyssinian Church combines Christian observances with many rites borrowed from Judaism. The Hebrew Sabbath and the Christian Sunday are held equally sacred; circumcision is practiced, and Jewish ceremonies and restrictions regarding food are enforced.

There are numerous towns, the largest of which, Ankober, capital of Shoa, has 7,000 inhabitants.

Productions and Commerce.—Although the country is fertile, there is little tillage. The

people are pastoral, raising large herds of cattle, besides sheep and goats. Among the vegetable products are indigo, which grows wild, coffee, cotton, dates, sugar-cane, and grapes. The chief exports are gums, skins, mules, ivory, and butter. What external trade there is passes through Massowah.

The Italian Protectorate.—In return for arms and other aid given by the Italians to Menelek while he was contending against rival claimants for the throne, he made a treaty on May 2, 1889, which was construed on the part of the Italian Government as giving a protectorate over the country. After the Negus had conquered Tigré and was established on the throne he sent an envoy to Italy, Degiac Makonen, who confirmed and strengthened the compact by signing a treaty for mutual protection in October, 1889. When Count Salimbeni, who was appointed Italian minister resident at the Abyssinian court, arrived at Ankober the Emperor Menelek denied that he had accepted an Italian protectorate or bound himself to make the Italian Government his intermediary in all dealings with other powers and to give the preference to Italians if he wished to make commercial or industrial concessions to foreigners. Count Antonelli, who had negotiated the original treaty, was sent out in October, 1890, as a special envoy to bring about a settlement of the question. He was unable to induce Menelek to change his attitude, and on Feb. 11, 1891, he broke off negotiations and returned with Count Salimbeni to the coast, bringing away also all the Italian residents in Shoa and Harrar. The Emperor Menelek, who had contracted a loan of 2,000,000 francs in Italy, sent gold to pay the installments as they fell due. The feud between the chief Debeb and the other rival claimants for the throne who were defeated by King Menelek ended in a combined attack of Mangascia and Ras Alula and their retainers on the camp of Debeb on Sept. 29, 1891, and the rout of the last-named, who was killed.

A Russian Expedition.—The Russian Foreign Office has watched with keen interest the successes and setbacks of the Italians in Abyssinia. The Atchinoff expedition was furthered by only two or three members of the Russian ministry, and was not approved by the Minister

of Foreign Affairs or the Minister of War, who had no confidence in the "Hetman of the Free Cossacks." The Minister of War, Gen. Vannoffsky, arranged with a more trustworthy agent, Lieut. Mashkoff, a native of the Caucasus who had served in the army there. With a companion, a Montenegrin named Zlatytshanin, Mashkoff went to Abyssinia, taking presents for the Negus and some of the chiefs, was received as a military representative of the Czar, visited Antoto, Ankober, and other cities, gathered much information about the country, and returned to Russia in the beginning of 1890. The Negus complained to the Russian officer of the Italians, accusing them of bad faith, and appealed for the assistance of the Czar to enable him to maintain his independence. This was the beginning of a secret intercourse between the Russians and Menelek, which Atchinoff, who preceded Mashkoff, was unable to establish because his credentials were unsatisfactory, and he was therefore warned to leave the country.

The ground for the special interest of Russia in Abyssinia is the affinity between the orthodox and the Coptic forms of Christianity, both being offshoots from the Alexandrian Church. About the time when the Italians established themselves on the Red Sea coast and revealed the intention of bringing Abyssinia into their sphere of influence, the Russian Government began to assume the rôle of religious protector of the Copts, similar to that of the French Government in relation to the Syrian Christians. For four years past a mass has been celebrated in the Coptic cathedral at Cairo by the patriarch, decked in Muscovite orders, on each birthday of the Czar. The French at Oboek and in Egypt, while their officials have observed toward the Italians a correct though not sympathetic attitude, have privately assisted the efforts of the Russians to establish intimate relations with Abyssinia. After conferring with the Russian ministers and with the Czar, Lieut. Mashkoff set out in the summer of 1891 on another expedition to Abyssinia, not ostensibly political, but scientific, under the auspices of the Geographical Society of St. Petersburg. He was accompanied by Zlatytshanin, a Russian monk named Tikhon, a sacristan, and a son of Gov. Vsevoloshsky, of Tamboff. His intention was to arrive in Abyssinia in the rainy season, push on to Ankober, and thence to Antoto, where the king holds his court, and from there make excursions to various districts of the kingdom, to the Galla country, and perhaps to the region of the Blue Nile and the Soudan. The monk Tikhon is said to have a letter from the patriarch at Cairo authorizing him to officiate in the Abyssinian churches. The leader of the expedition expects to make a commercial treaty and acquire territorial and mining concessions that will lead to the industrial employment of Russian capital and to an active exchange of Russian cotton goods, rifles, spirits, and salted meats for gold, which is abnormally abundant in Abyssinia and the Galla districts, ivory, of which great quantities are stored, and the gums and other commercial products of the region.

Before the departure of the expedition Baron Marochetti, the Italian ambassador at St. Petersburg, questioned M. de Giers as to its purpose. The Russian Minister of Foreign Affairs

replied that the Russian Government recognized Abyssinia as an independent kingdom, and assumed that the Negus had a right to receive whomever he will, and could not therefore acknowledge the right of any foreign government to demand explanations regarding Mashkoff's mission so long as it did not constitute a clear violation of existing treaties, but that, in a friendly way, he could assure Baron Marochetti that the primary object of the expedition was scientific.

Anglo-Italian Delimitation Treaty.—Protocols signed at Rome on March 24 and April 15, 1891, demarkate the respective spheres of influence of England and Italy in eastern Africa. The line of demarkation, starting at the mouth of the Juba, follows the channel of the river up to 6° of north latitude, leaving Kismayu and its territory in the English sphere. It follows the sixth parallel as far as 35° east of Greenwich, and then runs along that meridian up to the Blue Nile. The sphere of influence reserved to Italy is bounded on the north and on the west by a line drawn from Ras Kasar on the Red Sea to the point of intersection of the seventeenth parallel, north, with the thirty-seventh meridian, east. The line, having followed that meridian to 16° 30' of north latitude, is drawn from that point in a straight line to Sabderat, and thence southward to a point on the Gash 20 English miles above Kassala, and rejoins the Atbara at 14° 52' of north latitude. The line ascends the Atbara to the confluence of the Kor Kakamot, whence it follows a westerly direction till it meets the Kor Lemsen, which it descends to its confluence with the Rahad. Having followed the Rahad as far as the intersection of 35° of east longitude, the line identifies itself in a southerly direction with that meridian, until it meets the Blue Nile, saving ulterior amendment of details, according to the hydrographic and orographic conditions of the country. The Italian Government shall be at liberty, in case of being obliged to do so by the necessities of the military situation, to occupy Kassala and the adjoining country as far as the Atbara. Such occupation shall not abrogate the rights of the Egyptian Government over the territory, which shall only remain in suspense until the Egyptian Government shall be in a position to reoccupy the district.

AFGHANISTAN, a monarchy in central Asia, dividing the British Empire in India from the Russian possessions in Turkistan. The reigning sovereign is the Ameer Abdurrahman Khan, who was placed on the throne by the British, who invaded the country in 1879 and deposed Yakub Khan in consequence of the massacre of their envoy and his followers. They had in the previous year captured Cabul, the capital, and put to flight Yakub's father and predecessor, Shere Ali, and afterward withdrawn their forces. In 1890 the British troops were again withdrawn beyond the Khaibar Pass, and from Candahar to Quetta, a treaty of alliance having been made with Abdurrahman by which he was allowed a subsidy of \$50,000 a month from the Indian treasury and engaged in his relations with foreign powers to follow the advice of the Governor-General of India. The Indian Government supplies him with the munitions of war, and he has lately organized an army, independ-

ent of the tribal levies. The regular infantry is said to number 8,000, and the entire military force 50,000 men.

Area and Population.—The country is divided into the four provinces of Cabul, Afghan Turkistan, Herat, and Candahar, and the districts of Shignan and Badakhshan. The population is about 4,000,000, the Ghilzais numbering about 1,000,000, the next most numerous tribe being the Tadjiks, who are found in various parts of the country following agriculture and industrial trades, after which come the Duranis, the Aimaks and Hazaras, who are of Tartar descent, and the Uzbecks.

Productions and Commerce.—The soil in most parts of Afghanistan is irrigated, and produces a summer crop of wheat, barley, or legumes, and an autumn crop of rice, millet, or maize. The country abounds in *asafetida*, which is largely exported to India, in madder, and the castor-oil plant, and in many kinds of fruit of excellent quality, on which many of the inhabitants mainly subsist, and which in a preserved state is exported in large quantities. The mineral products are copper, lead, iron, gold, and precious stones. The chief manufactures are carpets, felt, silk, and sheepskin *postins*. The imports from India in 1889-90 were £813,450, and the exports to India £346,214, showing a marked improvement in trade, which was due to the cessation of internal disturbances. Transit dues imposed by the Ameer prevent the importation of English or Indian goods into the populous parts of the country north of Cabul. The duties on Russian imports are relatively much lighter. The Ameer is making efforts to establish manufactures in his country. Trade with Russia and Bokhara fell off in consequence of the late depression in Afghanistan; but still commercial relations with Russia are becoming closer, and at the last fair in Nijni-Novgorod Afghan merchants and goods were seen for the first time.

Political Situation.—After suppressing the rebellion of Isak Khan in 1888, Abdurrahman remained till the autumn of 1890 mostly at Mezar, the chief place of Afghan Turkistan, for the purpose of organizing the administration and crushing out the hostile elements, which he did with relentless cruelty. Yet without the friendly offices of the Russian authorities, who gave Isak Khan a sumptuous asylum at Samarcand, but afterward removed him to Tashkend in order to check his intrigues, and who co-operated with the Ameer in his efforts to replace pillage and violence with commerce and peaceful industry, the Afghan ruler would not have succeeded in gaining the good-will of the Uzbecks of Khulm Atshe, Shiborgan, Maimene, and Andkholi, and in permanently holding in check the adherents of Isak. In requital for their amicable support the Russians received important trade concessions. Caravans from Merv and Samarcand were granted free ingress into Herat, Mezar, and Maimene, although no English merchant is permitted to visit Candahar or Cabul for trading purposes. The Uzbecks, Turcomans, Tadjiks, Kizilbashs, and Aimaks, who inhabit the region north of the Hindu-Kush, look upon the Russians as their protectors against the Afghan oppressors; and the Ameer of Cabul, in his

subservience to Russia, is governed by the fear that his northern neighbors may at any time disrupt the empire that he has struggled hard to establish with the aid of more than £1,000,000 of English money. The Indian Government does not venture to tax him with disloyalty, or even to demand permission to extend the Pishin Railroad to Candahar, where an English army could flank a force seeking to invade India through Afghanistan. The railroad terminates now at the outlet of the Kojak tunnel, in "a hole in the wall," as it has been described, whence it is impossible to extend it 70 miles to Candahar without provoking a fresh war with Afghanistan, which would throw the Afghans into the arms of Russia. Such an eventuality was anticipated when the scientific frontier of northwestern India was determined on, to complete which Candahar will be necessary. This system of defense, that was adopted as the alternative of a strong and friendly Afghanistan which should serve as a bulwark against Russia, entailed an increase of £4,000,000 in the annual military expenditures of India, and the increase has now risen to £6,000,000, exceeding the cost of the Afghan war. The Ameer, who would consider an English advance to Candahar a more serious menace to his power than a Russian occupation of the conquered province of Herat, protested vigorously when the terminus of the British line was established at Chaman, asserting that it lay within his territory.

The Russian Transcaspien line, the starting-point of which is to be transferred from Uzun Ada on the Caspian to Krasnovodsk, which is a superior port farther to the north, runs for 400 miles in a southeasterly direction parallel to the mountain range that forms the boundary of Persia to Dushak, and then turns in a northeasterly direction and crosses the sand desert to Merv and the Oxus, and terminates at Samarcand, its total length being 900 miles. The oasis of Merv is being made by irrigation as fruitful as it was in ancient times. At Dushak the Russian railroad is in closest proximity to Meshed, the capital of the rich Persian province of Khorassan, as well as to the famous Afghan fortress of Herat, and a branch line is being constructed in the direction of Sarakhs, which is only 100 miles from Meshed and 170 miles from Herat.

Some Anglo-Indian military critics deprecate the abandonment of the plan of having a friendly Afghanistan as a buffer against Russian invasion, because there are some hundreds of passes through the mountains into India, to fortify and garrison all of which would transcend the resources of the Indian Empire. Both Russian and British military explorers have recently visited the Pamir and Kashgar and attempted reconnaissances in Tibet. The Indian Government has sought to gain the friendship of the predatory inhabitants of Kundjut by paying them a subsidy. Capt. Younghusband, leading a so-called scientific expedition to the Pamir and Kashgar, was warned by the Russians not to enter the Little Pamir, which borders on Chinese Turkistan. He found, in August, 1891, that a Russian outpost was established in that region, which the British assert to be a part of Afghanistan, while the Russians claim that the Ameer never held effective dominion over the Pamirs.

On information sent by him to Gilgit, a force of Goorkhas outnumbering the Russian guard was sent into the Pamir, and the Russians withdrew to avoid a collision.

The Alichur, or Great Pamir, and the Little Pamir are bleak and desolate table-lands, 10,000 to 14,000 feet above the level of the sea, bounded on the north by Russian territory, on the east by Kashgaria, a Chinese province, on the west by Afghanistan, and on the south by Chitral, Gilgit, and Jassin, Himalayan states under British protection. The boundary between the British and the Russian spheres of influence has not been marked out in this region, as it has before the gates of Herat on the northwestern frontier of Afghanistan. Since the delimitation in the west the British have extended their dominion over Cashmere and the frontier Hill states bordering on the Pamir, an English military agent has been stationed at Kashgar with the assent of the Chinese Government, the Chinese have laid claim to sovereign rights over parts of the Pamir, and the Ameer has reduced semi-independent tribes in the east of his dominions and conquered districts outside his former boundaries. His *rapprochement* toward Russia is said to have resulted in the renunciation of his rights over the khanate of Wakhand and of all claims to the Pamir steppes. The Russians have sent out so-called scientific expeditions, sometimes attended with Cossack guards, which have explored the Alichur and the Little Pamir up to the British frontier. Col. Gromtchevski in 1889 overpowered an Afghan detachment that was sent to arrest him, and by means of presents induced the officers of a Chinese outpost at the confluence of the Aksu and the Istigh to let him proceed to Kashgar. He found the Kilik Pass over the Hindu-Kush mountains exceedingly easy, and received a friendly welcome in the Hill state of Hanza-Nagyr. Afghan outposts turned him back at the Baroghil Pass, and Col. Nisbet, English resident in Cashmere, warned him away from Ladak. The Russian Government has several times invited the English Government to demarkate the frontier in the Pamir region. The Russians claim the greater part of the Pamir by reason of an agreement made between Prince Gortchakoff and Lord Clarendon in 1872 and restated in the delimitation treaty, which makes the Oxus the boundary between the spheres of influence of the two countries up to its source. Notwithstanding this agreement, the Russian authorities have recognized Shignan and other tracts over which the Ameer was found to exercise effective sovereignty north of the Oxus as Afghan territory. The English have assumed that the river flowing from Lake Victoria in the Alichur plateau is the principal head-stream of the Oxus. This the Russians hold to be a mistake, because the Aksu, rising in a lake in the Little Pamir, is much longer and carries a greater volume of water. The geographical expeditions of Gromtchevski, Greshimailo, and others were followed in 1891 by one of a more plainly political character, led by Prince Galitzin and accompanied by a strong Cossack escort, which started from Osh, in the Russian province of Ferghana, formerly the khanate of Khokand. Capt. Younghusband and Lieut. Davison, who attempted to recon-

noitre after the arrival of the Russians, were formally prohibited from entering the region claimed by Russia. The Russians dispute the right of China to the posts of Engghen, Irkistan, and Ulukchat, and all the passes west of Kashgar, insisting on the frontier conceded by Yakub Khan in his negotiations with Prince Kuro-patkin.

ALABAMA, a Southern State, admitted to the Union Dec. 14, 1819; area, 52,250 square miles. The population, according to each decennial census since admission, was 127,901 in 1820; 309,527 in 1830; 590,756 in 1840; 771,623 in 1850; 964,201 in 1860; 996,992 in 1870; 1,262,505 in 1880; and 1,513,017 in 1890. Capital, Montgomery.

Government.—The following were the State officers during the year: Governor, Thomas G. Jones, Democrat; Secretary of State, J. D. Barron; Treasurer, John L. Cobbs; Auditor, Cyrus D. Hogue; Attorney-General, William L. Martin; Superintendent of Public Instruction, John B. Harris; Commissioner of Agriculture, Reuben F. Kolb, succeeded in September by Hector D. Lane; Railroad Commissioners, Henry R. Shorter, Levi W. Lawler, W. C. Tunstall; Chief Justice of the Supreme Court, George W. Stone; Associate Justices, David Clopton, Thomas N. McClellan, Thomas W. Coleman, and R. W. Walker, who was appointed by the Governor in May, pursuant to the act of Feb. 12, 1891, providing for an additional justice of this court.

Finances.—The balance in the State treasury on Oct. 1, 1890, was \$332,561.17. For the fiscal year 1890-'91 the State tax rate of four mills produced revenue insufficient to meet the current State expenses, and the balance on Oct. 1 of this year was therefore slightly reduced from the figures above given. In 1891-'92 the rate will be four mills for regular State expenses, and one half-mill additional to raise money for Confederate pensions, pursuant to the act passed this year.

Railroads.—The valuation of railroad property for 1891, as fixed by the State Board of Assessment, was \$46,797,928.26, an increase of \$3,459,146.79 over 1890. There were 3,177 miles of railroad reported for assessment, an increase of 110 miles over 1890.

Banks.—The thirty national banks of the State held, on May 4, resources amounting to \$14,766,442, of which loans and discounts were \$8,765,694. Their combined capital stock amounted to \$4,329,000; their surplus fund to \$1,029,657; their undivided profits to \$742,493; their issue of bank notes to \$1,094,330; and individual deposits to \$6,260,527.

Coal.—The coals of Alabama embrace all the bituminous varieties, such as gas, coking, block, splint, and cannel. Mining of coal was begun in this State about 1853, but the total output did not reach 100,000 tons until 1876. The production for the census year 1880 was 323,972 tons, valued at \$476,911 at the mines. The product for the calendar year 1889 was 3,378,484 tons, valued at \$3,707,426. The average number of persons employed during the year, including superintendents, engineers, mechanics, and clerical force, was 6,762, and the amount of wages paid was \$31,175,356.

Population by Races.—The following table shows the white and colored population of the

several counties in 1880 and in 1890, according to the Federal census.

COUNTIES.	WHITE.		COLORED.	
	1890.	1880.	1890.	1880.
The State.....	880,706	602,185	681,481	600,108
Autauga.....	4,722	4,897	8,487	8,710
Baldwin.....	5,655	4,990	8,806	8,675
Barbour.....	13,321	13,091	21,576	20,884
Bibb.....	9,044	6,887	4,780	8,600
Blount.....	20,115	14,210	1,812	1,159
Bullock.....	6,066	6,944	20,996	22,119
Butler.....	11,368	10,684	10,273	8,965
Calhoun.....	23,891	14,194	9,941	8,457
Chambers.....	12,244	11,364	14,075	12,075
Cherokee.....	17,025	16,418	2,884	2,690
Chilton.....	11,438	8,651	8,116	2,142
Choctaw.....	8,110	7,390	9,412	8,741
Clarke.....	9,629	7,718	12,995	10,046
Clay.....	14,086	11,840	1,679	1,168
Cleburne.....	12,896	10,808	822	668
Coffee.....	10,183	6,881	1,987	1,288
Colbert.....	12,240	9,208	7,949	6,950
Conecuh.....	7,956	6,224	6,638	6,880
Coosa.....	10,456	10,050	5,420	5,059
Covington.....	6,713	4,968	828	671
Crenshaw.....	11,732	9,118	8,692	2,698
Cullman.....	18,394	6,812	45	49
Dale.....	18,855	10,558	8,870	2,122
Dallas.....	7,906	8,425	41,487	40,067
De Kalb.....	19,881	11,968	1,223	682
Elmore.....	11,829	8,747	10,408	8,755
Etowah.....	5,674	4,106	2,815	1,590
Fayette.....	18,097	12,896	8,829	2,502
Franklin.....	11,062	8,878	1,761	1,262
Geneva.....	9,550	8,079	1,131	1,076
Greene.....	9,648	8,829	1,047	513
Hale.....	8,192	3,765	18,815	18,165
Hamilton.....	5,063	4,908	22,448	21,650
Henry.....	15,891	11,994	8,998	6,767
Jackson.....	24,132	21,074	8,887	4,638
Jefferson.....	56,953	18,219	31,581	5,658
Lamar.....	11,388	9,967	2,849	2,173
Lauderdale.....	16,561	14,173	7,173	6,860
Lawrence.....	12,596	12,642	8,189	8,750
Lee.....	12,149	12,217	16,645	15,041
Limestone.....	12,075	11,637	9,125	9,968
Lowndes.....	4,466	5,646	27,084	25,528
Macon.....	4,148	4,887	14,290	12,784
Madison.....	19,228	18,591	18,886	19,084
Marengo.....	7,814	7,277	25,281	23,612
Marion.....	10,786	8,541	1,681	520
Marshall.....	17,552	18,084	1,884	1,496
Mobile.....	28,186	27,187	23,046	21,448
Monroe.....	8,327	7,780	10,660	9,284
Montgomery.....	14,590	18,457	41,686	38,599
Morgan.....	17,908	11,758	6,188	4,670
Perry.....	6,806	7,150	22,524	23,591
Pickens.....	9,286	9,182	18,184	12,947
Pike.....	15,638	14,968	8,789	6,272
Randolph.....	18,984	18,155	8,285	8,420
Russell.....	5,792	6,182	18,801	18,655
St. Clair.....	14,285	11,621	8,061	2,884
Shelby.....	14,281	12,258	6,605	4,988
Sumter.....	5,919	6,451	28,655	22,277
Talladega.....	15,849	10,856	14,008	12,504
Tallapoosa.....	16,854	16,108	8,606	7,298
Tuscaloosa.....	13,218	15,216	12,188	9,741
Walker.....	14,409	8,978	1,669	501
Washington.....	4,716	2,807	8,219	1,729
Wilcox.....	6,648	6,711	24,168	25,117
Winston.....	6,520	4,286	82	17

The population of the State in 1890 also included 40 Chinese and 750 Indians.

Iron Ore.—The following statistics respecting the iron-mining industry of Alabama for the year 1889 are reported by the Federal Census Bureau: Number of mines reporting, 48; number producing, 45; amount of ore produced, 1,570,319 long tons; value of product, \$1,511,611; total shipments from the mines, 1,526,982 long tons; value of shipments, \$1,457,314; capital invested in iron mining, \$5,244,902 (of which the value of land is \$4,258,645); total number of

employés, 3,081; total wages paid, \$995,222; total cost of producing one long ton of iron ore, 82 cents. In the amount of iron ore produced Alabama stands second among the States, while the cost of production is lower than in any other State. Since 1880 the total product has increased from 171,139 long tons to 1,570,319 long tons, or about 817 per cent., and the capital invested from \$536,442 to \$5,244,902.

Legislative Session.—The General Assembly, which convened at Montgomery on Nov. 11, 1890, completed its sessions on Feb. 18, 1891, having taken a month's recess over the Christmas holidays. Early in the session a contest arose between rival Democratic candidates for the seat in the United States Senate held by James L. Pugh. Senator Pugh sought a re-election, his competitors being Commissioner of Agriculture Reuben F. Kolb, ex-Gov. Thomas Seay, and ex-Gov. Thomas H. Watts. On the first ballot in the Democratic caucus, on Nov. 18, Pugh received 42 votes, Kolb 42, Seay 32, and Watts 11. Thirty-one caucus ballots were taken without a choice, the last standing Pugh 52, Kolb 34, Seay 24, and Watts 11, after which the contest was transferred to the General Assembly. In that body, on Nov. 28, Senator Pugh secured a re-election on the second joint ballot, receiving 90 votes to 39 for ex-Gov. Watts. Among the noteworthy laws of the session is an act requiring all railroads, other than street railroads, to provide equal but separate accommodations for the white and colored races, by furnishing two or more passenger cars for each train, or by dividing each car by a partition. A new pension law authorizes the annual levy for six years of a State tax of one half-mill on each dollar of taxable property, the proceeds to be divided, pursuant to the provisions of the act, among maimed and needy Confederate soldiers and sailors and the widows of their deceased comrades, no applicant receiving more than \$50 annually. An act for the improvement of the convict system provides for a commission, consisting of the Governor, the Board of Inspectors of Convicts, and one other person to be appointed by the Governor, which shall purchase land, erect buildings, and procure machinery, live stock, and other appliances, to furnish employment for convicts not leased or worked under contract, provided not more than \$10,000 be expended under this act before Oct. 1, 1892. The commission is also directed to investigate the subject of working all convicts on State account at all such industries as it may think desirable, and shall prepare a bill for the next General Assembly creating a new and complete convict system, providing for the employment of all convicts on State account as soon as practicable, and providing also for a reformatory prison for juvenile convicts, if the latter institution shall seem desirable. The same commission is authorized to sell the tract of land known as the State farm and to turn the proceeds into the treasury. An act to regulate the mining industry establishes a board of examiners, consisting of an inspector of mines and two mining engineers to be appointed by the Governor for two years, which shall examine and give certificates of fitness and service to mine bosses. After one year from the passage of the act, no person

other than those already acting as mine bosses shall be employed as such, unless he have a certificate from the board. The Inspector of Mines is further required to visit all underground mines at least once in three months, to examine them, and order such changes as are needed to secure the health and safety of miners. His orders may be enforced by the courts. The act applies only to mines where more than 20 persons are employed.

The oyster industry was regulated by an act that forbids the taking of oysters by non-residents of the State, prohibits the export of oysters in the shell except during a single month, requires the use of oyster tongs and nothing else in their taking, and imposes a license tax of ten cents a barrel on all oysters taken in the State.

Provision was made to establish the Quarantine Board of Mobile Bay, which is authorized to take land and erect at the entrance of Mobile Bay the buildings, wharves, and other structures necessary for a quarantine station. It shall make quarantine regulations, and shall cause every incoming vessel to be inspected by its officers. The sum of \$25,000 was appropriated on condition that Mobile County contribute the remainder of the total amount needed to complete the necessary buildings, and further undertake to pay the cost of maintaining the station above the income derived from quarantine fees.

The State was redistricted for members of both branches of the General Assembly, and the following new congressional districts were established: First District, counties of Marengo, Choctaw, Clarke, Monroe, Washington, and Mobile; Second District, Montgomery, Pike, Crenshaw, Covington, Butler, Conecuh, Escambia, Baldwin, and Wilcox; Third District, Lee, Russell, Bullock, Barbour, Dale, Henry, Coffee, and Geneva; Fourth District, Dalton, Chilton, Shelby, Talladega, Calhoun, and Cleburne; Fifth District, Lowndes, Autauga, Tallapoosa, Elmore, Macon, Coosa, Chambers, Randolph, and Clay; Sixth District, Sumter, Pickens, Greene, Tuscaloosa, Lamar, Fayette, Marion, and Walker; Seventh District, De Kalb, Marshall, Etowah, Cullman, St. Clair, Wilson, Cherokee, and Franklin; Eighth District, Jackson, Madison, Limestone, Morgan, Lauderdale, Lawrence, and Colbert; Ninth District, Jefferson, Bibb, Hale, Perry, and Blount.

The State Supreme Court was enlarged from four to five members. The office of Commissioner of Agriculture, heretofore filled by appointment of the Governor, was declared elective, and provision was made for an election in 1892 and every second year thereafter to choose an incumbent. Following the precedent set by the General Assembly of 1889, the legislators appropriated \$350,000 annually for the public schools in 1891 and 1892. A school for deaf, dumb, and blind children of the negro race, called the Alabama School for Negro Deaf Mutes and Blind, was established at Talladega, on a site given to the State, and \$12,000 were appropriated for buildings. The Ladies' Memorial Association of Montgomery secured \$10,000 from the State to aid in completing a monument to the Confederate soldiers, after being refused by the preceding General Assembly. An appropriation of \$12,500 was granted for the purchase of land and the erection of buildings for farm purposes near the Alabama Insane Hos-

pital, whereon some of the inmates may be employed; and \$10,000 was given to the Medical College of Alabama at Mobile for remodeling the buildings and purchasing apparatus. For each of the years 1891 and 1892 the expenditure of \$13,500 on an encampment of the State troops was authorized.

Other acts of the session were as follow:

To incorporate the Confederate Association of Alabama.

To incorporate the cities of Girard, Ozark, Asheville, and Bridgeport.

To provide for the sale or lease of school indemnity lands, certified to the State by the United States, and for the disposition of the proceeds.

To establish new charters for the cities of Birmingham and Decatur.

To prohibit the sale, furnishing, or giving to any minor under eighteen years of age of cigarettes, tobacco, or cigarette paper, or any substitute therefor.

Authorizing the issue of \$450,000 in bonds by the city of Birmingham for internal improvements.

Authorizing the issue of \$400,000 in bonds by the city of Montgomery for constructing water works.

Providing that, when any person dies leaving no husband or widow or children, or their descendants, but leaving parent or parents, his or her property shall pass to both parents in equal portions, or if only one parent is alive, half shall go to him or her and half to the brothers and sisters and their descendants; provided that, if there be no such relatives, the whole shall go to the surviving parent.

Imposing upon each peddler of clocks a State license tax of \$500, and a county license tax of \$250 for each county in which such business is carried on.

To provide for the teaching in the public schools of physiology and hygiene, with special reference to the effects of alcoholic drinks, stimulants, and narcotics upon the human system.

Extending the scope of the geological survey of the State.

To provide for the apportionment of the school fund to the various townships and school districts according to the entire number of children of school age.

Increasing the amount of time which the Governor may deduct for good behavior from the sentence of prisoners.

To provide for the legal examination of dead bodies of persons believed to have been poisoned.

To prohibit the payment or allowance of claims against the estates of decedents, which have been barred by the statute of limitations in the life of such decedent.

To prevent justices of the peace and notaries public from sentencing defendants to hard labor for costs.

To punish persons who keep cock-pits, or who publicly fight cocks.

To dispose of lands bid in by the State for taxes.

To establish the legal weights of agricultural products.

To prohibit pools, trusts, or combines to regulate or control the prices of products, goods, wares, and merchandise, and imposing penalties for violations of the act.

Giving to every mechanic, firm, association, corporation, or other person who shall work on or furnish material, fixtures, engine, boiler, or machinery for any building, article, improvement, or utility on land, or for altering, repairing, or beautifying the same, a lien thereon on such building, article, improvement, or utility, and on the lot of land on which the same is situated, and also a lien for costs, including a reasonable attorney's fee, not to exceed \$25.

Establishing at Springville a school of industrial arts and sciences for the destitute children of Confederate soldiers and sailors, known as the Confederate Children's Industrial School, to be under State control, but supported by private funds.

Providing that not fewer than fifty State or county convicts shall be hired to one person, or kept at one prison, except at the coal mines, where not fewer than one hundred shall be kept at one prison and worked at one place, women being in all cases separated from men.

Education.—For the year ending Sept. 30, 1890, the State Superintendent of Education reports the following public-school statistics for ten of the thirteen separate school districts in the State, and for the counties outside of the separate districts:

ITEMS.	Counties.	Districts.
Pupils enrolled, white.....	180,495	8,291
Pupils enrolled, colored.....	111,648	2,466
Average attendance, white.....	105,661	2,799
Average attendance, colored.....	69,597	1,443
Number of white schools.....	4,134	.....
Number of colored schools.....	2,174	.....
Male teachers, white schools.....	2,566	.....
Male teachers, colored schools.....	1,387	.....
Female teachers, white schools.....	1,500	.....
Female teachers, colored schools.....	683	.....
Average monthly pay, white teachers.....	\$22 04	.....
Average monthly pay, colored teachers.....	\$21 05	.....
Average school year in days.....	69	.....

The total receipts of the State school fund during the year were \$495,164.84, from which the sum of \$455,658.01 was apportioned to the several counties and school districts, the remainder being devoted to the normal schools and expenses of superintendence. An enumeration of the school population at the beginning of the school year showed 295,766 white children and 226,925 colored; total, 522,691. A similar enumeration in 1891 showed 307,653 white and 239,893 colored; total, 547,546.

The numbers of pupils enrolled at the normal schools during the year 1889-'90 were as follows: State Normal College, Florence—normal department, 231; training school, 105. Livingston Normal School, 120. Troy Normal College, 282. Jacksonville Normal School, 183. Huntsville Normal and Industrial School, 258. Tuskegee Normal and Industrial Institute—normal department, 447; training school, 110. Montgomery Normal School—normal department, 371; preparatory department, 457.

World's Fair Convention.—No appropriation was made by the General Assembly of 1890-'91 to secure a representation of the State at the World's Columbian Exposition in 1893. The legislators resentfully refused to take any action upon this subject so long as the Republicans in Congress continued to press the bill for the regulation of congressional elections. After that bill had been defeated in Congress, a measure appropriating \$30,000 for the exposition, which was introduced and passed in the Senate, was defeated in the lower house. Under these circumstances a convention was called, under private auspices, to meet in Montgomery in the latter part of May, and to provide means for securing a fund for a suitable State exhibit. At this convention it was decided to incorporate a company, known as The Alabama World's Fair Association, with a capital stock of \$25,000, which could be increased to \$100,000, and to invite popular subscriptions at the rate of \$1 a share. The officers of this company were authorized to expend the money so collected in procuring a proper exhibition of the resources of the State at

the exposition. A committee of women was appointed and authorized to call a convention of women not later than Dec. 1, at which provision should be made to obtain an exhibit of the industries of Alabama women. It was further resolved

That this convention request the Commissioner of Agriculture of this State, by and with the approval of the Governor, to expend not exceeding \$10,000 of the fund in the treasury of the State to the credit of the Department of Agriculture not otherwise appropriated in accordance with the code, to illustrate the resources of this State at the Columbian Exposition.

Resolved, further, That not less than \$50,000 shall be raised by private subscription or otherwise for the same purpose.

Political.—Although there was no general election this year, the political history of the State was not without interest. A serious breach had been made in the Democratic ranks as a result of the contest of 1890. On one side were the supporters of Reuben F. Kolb, Commissioner of Agriculture, a leader of the Farmers' Alliance, who had lost the gubernatorial nomination in 1890 by only a few votes, and who later was defeated as a candidate for United States Senator. On the other side were the old Democratic leaders, who opposed the efforts of Kolb to obtain control of the party by the aid of the Farmers' Alliance. The Democratic State Committee met early in July and appointed a committee, which later in the month issued an address to the people urging the formation of local Democratic clubs and the necessity of loyal support to the party. Later in the year speakers were sent out to combat the Alliance doctrines. The sub-treasury scheme, advocated by the Alliance, was specially denounced. Soon after his inauguration Gov. Jones ordered an investigation into the official conduct of Commissioner Kolb. In April he received a report from the examiner declaring that the accounts of the office were loosely kept, and that evidence had been found to show that the commissioner and his clerks had charged the State for railroad fares when they actually rode on free passes. No action was taken on this report, and it seems not to have injured the popularity of Kolb with the Alliance. But when, on Sept. 1, his term of office expired, he was not reappointed by the Governor, who named Hector D. Lane as his successor. Kolb then refused to vacate the office, claiming that the General Assembly had deprived the Governor of his appointive power over the office by the act of this year making it elective, and providing for the election of an incumbent at the general election in 1892. A suit against him was at once brought by Lane in the probate court of Montgomery County, in which the judge decided that the appointment of Lane was void. An appeal was taken to the State Supreme Court, where arguments were made on Sept. 23. On Oct. 5 a majority of the court rendered a decision overruling the lower court and declaring the appointment of Lane to be valid, on the ground that the act by its terms did not take effect till the next general election in 1892, and that, meanwhile, the Governor, acting under the old law, had power to appoint a successor to Kolb at the end of his term. The minority opinion, signed by two judges, held that the act took effect at once upon its passage, taking away the

power of appointment by the Governor; that Kolb was thereby ousted from office as soon as the act was passed, and that a special election should have been called to fill the vacancy. In either case the decision was adverse to Kolb, and Commissioner Lane, in accordance with the majority opinion, proceeded to discharge the duties of the office.

ANGLICAN CHURCHES. Property and Revenues of the Church of England.—A return has been published of the property and revenues of the Church of England as presented to Parliament by the Ecclesiastical Commissioners. It shows that the aggregate annual income of the Church amounts to £5,753,557, of which £5,469,171 are derived from ancient endowments, and £284,386 from private benefactions since 1703. The lands, tithe rent-charges, and other sources of income held by the occupants of archiepiscopal and episcopal sees have produced a gross total of £87,827 from ancient endowments and £11,081 from private benefactions since 1703. Cathedral and collegiate churches are credited with property to the yearly value of £192,460, the whole of it from ancient endowments. The holders of ecclesiastical benefices receive from various enumerated sources a gross income of £3,941,057 from ancient endowments and £272,605 from private benefactions since 1703. The total gross Church income in the hands of the Ecclesiastical Commissioners is £1,247,827, subject to deductions for outgoings to an unstated amount, and subject further to permanent charges in favor of bishops, chapters, archdeacons, and incumbents, amounting, "with other liabilities," to more than £950,000 a year. Of this sum, £597,000 are paid to incumbents as augmentation grants, and the rest to bishops, chapters, and archdeacons. The governors of Queen Anne's Bounty hold a capital sum of £4,456,124, the income from which has been included in the return of incomes received by the holders of ecclesiastical benefices. They also hold certain lands in the county of Lancaster producing a gross rental of about £700 a year. To these sums must be added, as property belonging to the Church, the archbishops' and bishops' residences, with a total ratable value of £11,151; the residence houses attached to cathedral and collegiate churches, £18,928; and 11,667 parsonage houses, rated at £518,054. Of the cost of the last, more than two thirds may be regarded as derived from private benefactions and from payments made by the clergy out of their incomes.

Convocation of Canterbury.—The Convocation of Canterbury met for the dispatch of business at Westminster, Feb. 4. The upper house considered a draft of a proposed bill for the amendment of the Marriage Act, and sent it to the lower house and the House of Laymen. The bill is intended to meet the existing difficulties in the definition of the residence of parties publishing banns of marriage, and in other ways to facilitate marriage. Under it the clergy will be relieved from the duty of inquiring as to residence. A form for admitting converts from the Church of Rome and for restoring those who have relapsed was approved. A report on sisterhoods and deaconesses was adopted. It recognizes their value and importance, assumes that the Church should extend its care and guidance

to them, and defines conditions on which those who enter them, being not less than thirty years of age, may undertake life-long engagements to their work, but prescribes against any interference with the freedom of individual sisters to dispose of their property as they may see fit. The resolutions concerning deaconesses declare that "deaconesses having, according to the best authorities, formed an order of ministry in the early Church, and having proved their efficiency in the Anglican Church, it is desirable to encourage the formation of deaconesses' institutions and the work of deaconesses in our dioceses and parishes," and provides that deaconesses shall be admitted in solemn form by the bishop with benediction by laying on of hands; that there shall be an adequate term of preparation and probation; that they may be released from their obligations by the bishop of the diocese in which they were admitted; that license to serve in any parish may be given by the bishop at the request of the incumbent to any deaconess employed therein; that their dress should be simple and distinctive; that they should not pass from one diocese to another without the written permission of both bishops; and that special care should be taken to provide for every deaconess sufficient time and opportunity for the strengthening of her own spiritual life. Resolutions were also passed declaring that the time had come "when the Church can with advantage avail herself of the voluntary self-devotion of brotherhoods, both clerical and lay, the members of which are willing to labor in the service of the Church without appealing for funds to any form of public support." The house further advised that a wide elasticity was desirable in the rules and systems of such brotherhoods; that they should work in subordination to the authority of the bishop of the diocese, and should be employed only under the sanction of the incumbent or curate in charge in each parish; that members of them, after an adequate term of probation, might undertake life-long engagements, subject to release, for cause shown, by the bishop; and that the statutes of the community should be under the sanction of the bishop. The lower house adopted a resolution asking the upper house to take steps for adjusting the differences between the Anglican bishop in Jerusalem and the Church Missionary Society, and for "strengthening the catholic relations of the Church of England with the orthodox churches of the East, and rendering renewed and vigorous support to the mission among the Mohammedans of Palestine." The differences referred to as existing at Jerusalem grew out of charges published by the bishop in Jerusalem that some of the Church missions in Palestine were prosecuted by methods at variance with ecclesiastical principles and usage, and likely to hinder the growth of closer union between the English and Orthodox Eastern Churches; to which the Church Missionary Society replied, affirming and maintaining its methods.

The Houses of Convocation met, for the second time in the year, April 28. In the upper house the resolutions on education adopted by the lower house in 1890 were concurred in. The lower house resolved that if clause 2 of the Church Discipline bill should be adopted unaltered, Her

Majesty be prayed to grant Convocation power to frame a canon which should enable the Church authorities to deprive criminous clerks of their ecclesiastical preferments. The House of Laymen approved of the Clergy Discipline bill, but suggested that it be amended so that the sentence of deprivation should be the act of the Church rather than of the state; discussed the subject of religious instruction in the schools; asserted the need of better religious provision for work-houses; and directed inquiry into the methods by which Christians of all denominations may co-operate in that work, "so as to bring the whole power of Christianity to bear upon the social improvement of the people."

Convocation met again June 30. A petition was presented and received in the upper house for a committee to consider the desirability of altering the amended Act of Uniformity so as to extend its provisions to the Sunday services, or to permit the same elasticity in ritual on Sunday that is allowed other days of the week. Thereby the requirements might be met of parishes where the bulk of the population is estranged from the Church. A motion according to the terms of this petition was rejected in the lower house. The resolutions adopted by the lower house in May, 1890, on the subject of education were taken up, and such of them as were still timely were concurred in. They welcome the code of 1890 considered as a whole, particularly in view of the recognition it gives to the importance of children's moral training and discipline, the method of its distribution of parliamentary grants to a school, its provisions for improvement in the character of the instruction given, and the arrangements for increasing the efficiency of small inland schools; declare that the new code must fail of its purpose unless an act is obtained to provide for an enlargement of the 17s. 6d. limit, and for the exemption of public elementary schools from local rates; and seek further information regarding the moral and religious training of day students. Satisfaction was expressed that the bill put no new restriction on religious teaching, and did not interfere with the management of Church schools; and the power of the house was pledged to secure adequacy of the grants given by the state in lieu of school fees. The report of the joint committee on the Free Education bill, comprising recommendations concerning details relative to the Government allowances to schools and to the payment of fees, was presented and considered. The bill was also discussed in the lower house and the House of Laymen.

Missionary Societies.—The one hundred and ninetieth annual meeting of the Society for the Propagation of the Gospel in Foreign Parts was held April 30. The Archbishop of Canterbury presided. The society had received during the year from all sources £164,382, or £26,000 more than in any previous year of its history, and by its enlarged means it had been enabled to extend its operations very widely. The first bishop had been consecrated for Chota Nagpur, India; the mission in New Guinea had been begun; the Bishop of Corea with a staff of missionaries had begun their work in that country. The number of ordained missionaries, including eight bishops, on the society's lists was 660, viz., in Asia, 220; in Africa, 142; in Australia and the Pacific,

17; in North America, 215; in the West Indies, 34; and in Europe, 32. Of these, 127 were natives laboring in Asia and 29 in Africa. There were also in the various missions about 2,800 lay teachers, 2,600 students in the society's colleges, and 38,000 children in the mission schools in Asia and Africa.

The ninety-second annual meeting of the Church Missionary Society was held May 5. Sir J. H. Kennaway, M. P., presided. The total receipts for the year, including those for special funds, had been £247,737. The expenditures had been £239,208, of which £15,656 were covered by the Nyanza, Soudan, extension, and other special funds applicable to the society's general work. The report showed that 79 missionaries had been added to the roll, and referred, among other matters, to the Anglo-German agreement, which had definitely committed Uganda, Usoga, and other fields to British influence; to the progress of the Imperial British East Africa Company in opening up the country; to a readiness displayed by many Mohammedans to hear the Word of God in Persia, Mesopotamia, and Palestine, and to the difficulties which had arisen in connection with work in Palestine; to the fact that at the recent National Congress in India 40 members were Christians; to the plans for a new mission in the remote western province of Sz-chuen, to be begun by a pioneer party under Rev. J. H. Horsburgh; to the presence in the new Japanese Parliament of 14 Christians, and the election of one of them to the presidency of the lower house.

The complete report shows that the society occupied 327 stations—viz., 44 in West Africa, 13 in eastern equatorial Africa, 1 in Egypt and Arabia, 11 in Palestine, 2 in Persia, 109 in India, 17 in Ceylon, 8 in Mauritius, 23 in China, 11 in Japan, 36 in New Zealand, 43 in northwest America, and 9 in the north Pacific. It employed 4,358 missionaries, pastors, teachers, etc., of whom 655 were Europeans, 30 Eurasians, etc., and 3,673 natives. The whole number of native Christian adherents was 195,463, of whom 50,005 were communicants, and 10,491 persons had been baptized during the year. There were also 1,720 schools, with a total of 70,311 native pupils.

Curates' Augmentation Fund.—According to the report made at its annual meeting, June 18, the receipts of this fund for the year had been £8,724, or nearly £600 more than those of the preceding year. The sum of £6,808 had been paid in advance to 150 curates, whose average service was twenty-eight years and whose average stipend was £126 a year. The object of the fund was to give to licensed curates who had been in active work for upward of fifteen years grants of £50 in augmentation of their stipend, to be continued as long as they remained curates. The number of curates who had served the Church for that period was about 1,200. The fund was unable with its present grants to give aid to more than 125. The average stipend of curates who had been twenty-five years in holy orders was £118. The report asserted that this fund was the only society in England that provided a fixed and certain income for the unbeneficed clergy, and it was the only one that directly helped the older curates and the Church and offered a better prospect to those entering the ministry.

Liberation Society.—The annual meeting of the Society for the Liberation of Religion from State Patronage and Control was held in London, May 6. Sir G. Trevelyan, M. P., presided, and made an address vindicating the necessity of the society taking part in political activity. He mentioned as the chief matter in which the society was now immediately interested the contemplated institution of free education, and he urged his hearers to be watchful to secure a real exemption from fees in all the grades of the public schools, and to have the elementary schools, in the villages as well as in the great cities, placed under a real and not a nominal popular control.

The Church House.—The foundation-stone of the Church House was laid June 24 by the Duke of Connaught, with the assistance of the Duke of Westminster, the Archbishop-designate of York, the Archbishop of Canterbury, and the Bishops of London and Carlisle. The Duke of Westminster, in presenting the building, said that the corporation looked forward to the time when it would be regarded as a central institution of supreme value to the Church at home and to all English-speaking churches throughout the world. The Bishop of London anticipated that it would become a center of communication between all the different branches of the Church; and the Bishop of Carlisle that it would do more than anything else to bring together all the clergy and laity of all sections of the Anglican Church, including the American Church.

The Church Association.—The twenty-sixth annual meeting of the Church Association was held in London, May 3. The report noticed as among the events of the year bearing upon the objects of the association, the faculties granted by the Chancellors of Hereford and Gloucester for the removal of "altar" crosses and candlesticks where the clergy and parishioners concurred in desiring it; the confirmation by the Chancellor of Chichester of the ruling of Chancellor Kempe that what are called "side altars" are now illegal in the Church of England, and that no faculty could lawfully issue for their erection; the opinion given at the request of the Bishop of Gloucester by Chancellor Jeune, that a bishop had no power to forbid the removal of the Lord's table at service time; the institution of a second suit in order to bring before the House of Lords the fact that idolatrous worship had been publicly paid before the graven images set up at St. Paul's; and the prosecution of the Bishop of Lincoln. But notwithstanding certain admissions, the judgment of the archbishop's court in this case, as a whole, seemed so utterly at variance with the decisions of the Privy Council in previous suits that an appeal was at once seen to be inevitable. A resolution was passed deploring "the episcopal pressure put upon English missionaries laboring in foreign lands to prevent their witnessing against the departures from the faith by the Eastern and other churches which are recognized as corruptives in the XIXth of the XXXIX Articles of Religion to which all missionaries have solemnly subscribed," and urging the committees of all evangelical missionary societies in connection with the Church of England "strenuously to resist every kind of interference which

might compel her faithful members to seek other channels and agencies than her own for the preaching of the Gospel as a witness unto all nations."

The Church Union.—The thirty-second annual meeting of the English Church Union was held in London, June 9. Viscount Halifax presided, and considered in his address the likeness between the conditions under which the union met now and those under which the leaders of the Oxford movement took counsel just fifty years before. They welcomed the decision of the Archbishop of Canterbury in the case of the Bishop of Lincoln, because, for the first time since those matters had been made the subject of legal proceedings, they had had a judgment which had recognized the fact of the continuous existence of the Church of England. The report showed that 4,032 communicants had joined the union in 1890, making the present number of members 32,975. Resolutions were passed regretting the adoption of free education, "as calculated to widen still further the sacred tie between parent and child, and to injure, if not to destroy, the position of voluntary schools"; giving to the Rev. J. Bell Cox assurance of sympathy and support; and pledging the union to work for the repeal of the law which compels the clergy to allow the use of their churches for the marriage of divorced persons.

The Case of the Bishop of Lincoln.—The court of the Archbishop of Canterbury gave its decision, Jan. 21, in the case of the prosecution against the Bishop of Lincoln for offenses in ritual. The complaints against the defendant included charges that when celebrating the holy communion, on certain specified occasions, he had allowed two lighted candles to stand upon (or apparently upon) the communion table; had added water to the wine and administered it so mixed; had before the consecration prayer stood in what is called the eastward position; had during the consecration prayer stood so that certain "manual acts" could not be seen; had allowed the hymn "O Lamb of God" to be sung after the consecration; had made the sign of the cross at the absolution and benediction; and had taken part in what is referred to in the articles as the "ceremony of ablution"—which acts, it was alleged, were all and each of them contrary to the law. The bishop pleaded that the acts which were done by him or with his sanction were not any of them illegal; that he had no wish or intention to prevent the communicants present from seeing him break the bread and take the cup into his hands.

Concerning the charge of mixing water with the wine, the court decided that mixing in and as part of the service is against the law of the Church, but found no ground for pronouncing the use of a cup mixed beforehand to be an ecclesiastical offense. To the charge of ablution, the bishop had answered that, in the disposition of the elements which he had made after administering them to the communicants, "the remains of that which was consecrated were completely and reverently eaten and drunken in accordance with the rubric." The court was not able to hold that any minister who, after the service was ended and the benediction given, in order that no part of the consecrated elements

should be carried out of the church, cleansed the vessels of all remnants in a reverent way without ceremony or prayers before finally leaving the holy table, would have subjected himself to penal consequences by so doing. In this case it would have been illegal to vary the service by making the "ceremony of ablution" charged in the articles, or the like, appear to be part of it, but the evidence did not show that this was done. The charge of standing in the eastward position in the first part of the communion service was dismissed, on grounds developed in reviewing the legislation on the subject. Respecting the charge of standing with his back to the people while breaking the bread for the communion, the court decided that "in the mind of a minister there ought to be a wish and intention to do what has to be done, not merely no wish or intention not to do it; that in this case he must not hide the acts by doing what must hide them; that he must not be so indifferent as to what the result of what he does may be as to do that which is certain to make them invisible." The court ruled, therefore, that the bishop had mistaken the true interpretation of the order of the holy communion in this particular, and that the manual acts must be performed in such wise as to be visible to the communicants properly placed. The singing of the anthem "O Lamb of God" was held to be on a par with the singing of any other hymn that might be selected and allowed at that part of the service, and therefore not to be an illegal addition to it. As to the use of lighted candles, the court did not find sufficient warrant for declaring that the law is broken when they are standing on the holy table continuously through the service, "nothing having been performed or done which comes under the definition of a ceremony by the presence of two still lights alight before it begins and after it ends." Finally, the court found that there was no justification either in direction or usage for making the sign of the cross in giving the final benediction; that the action was a distinct ceremony, not "retained," since it had not previously existed; and that therefore it was a ceremony additional to the ceremonies of the Church "according to the usage of the Church of England." "This ceremony," the court declared, "is also an innovation which must be discontinued." In some observations on the case after the conclusion of the judgment, the court said that it had not only felt deeply the incongruity of minute questionings and disputations on great and sacred subjects, but desired to express its sense that time and attention were diverted thereby from the Church's real contest with evil and building up of good both by those who gave and by those who took offense unadvisedly in such matters.

The archbishop afterward, Dec. 6, addressed a letter to the archdeacons and rural deans of the province, explaining, according to the wishes of certain of the clergy, the bearing of the decision upon their own services. He asked them, first, to consider the disproportion between those points of ritual which had been contested and the grand characteristics in which all agree of the English eucharistic service; to consider the vital importance of peace, charity, and unity; and to consider the ruling principle of St. Paul's life and counsel,

that not all that is lawful is expedient, that the feeling of the flock of Christ is the substance and evidence of expediency, and, according to St. Paul's example, to limit choice by expediency, and to abstain not only from the parade of their convictions, but "from the very use of them when surrounded by eyes that would be pained and spirits that would suffer at sight of what seemed their dangerous advance." He had no fear that men were in danger of being led to the Church of Rome. Each of the conclusions of the court, the archbishop added, relies on the whole chain of the history of each observance, and the dogma that the English Church is a true, faithful branch of the Church Catholic. The conclusions reached were "simply the decision that such or such an act is or is not, expressly or by implication, forbidden by the law of our Church, or is or is not, in immediate or ultimate consequence, actually penal by the law as it now stands. It is evident that decisions of this character are far from throwing the weight of the court's authority upon the side of any act which it does not find to be illegal."

The case was carried by the promoters of the suit on appeal to the judicial committee of the Privy Council, and came up in that court June 10. The appellants sought the reversal of such parts of the judgment of the archbishop's court as were in favor of the bishop, and the pronouncing of such sentence of monition against the bishop as the ecclesiastical law provided, and they also applied for an order as to costs. They contended that the offenses alleged against the bishop were contrary to the acts of uniformity and the laws ecclesiastical, and infringing the statutes of Edward VI, etc., still unrepealed, besides having been held to be illegal by the judicial committees in the cases of "Westerton *vs.* Liddell," "Martin *vs.* Macdonochie," "Hibbert *vs.* Purchas," "Clifton *vs.* Ridsdale," and others; and they asserted, on the authority of those judgments, that the mixing of water with the sacramental wine and the administration of the mixed chalice, the ceremony of ablution, the eastward position, the singing of the "Agnus Dei," and the burning of candles on the communion table when not required for light were illegal, and had, as such, been condemned, and that in these respects the archbishop's judgment was erroneous.

The St. Paul's Reredos.—In the case of the Queen *vs.* the Bishop of London, in the Queen's Bench Division, a mandamus was applied for to command the Bishop of London to allow a second representation to be prosecuted, under the Public Worship Regulation Act of 1874, against the reredos in St. Paul's, while an application was already pending on appeal before the House of Lords. The two complaints or representations were different, in that in the first one it was alleged that the "sculptured images" in the reredos tended to encourage superstitious reverence, and in the second one it was alleged that they had in fact encouraged and led to such superstitious reverence, and that acts of superstitious reverence had, in many instances, been actually committed. The judgment of the court, which was given Nov. 14, 1890, turned upon the question whether the two representations were or were not substantially identical. On this the judges were divided, and the application for a

mandamus therefore failing, the practical result was favorable to the bishop. The case was carried up to the Court of Appeal, where a decision was given, Dec. 2, against the applicants for a mandamus and in favor of the bishop. Lord-Justice Esher defined the question in the case to be whether the judgment in the former case, which had been carried to the House of Lords, governed the present. The allegations in that case, it was true, were different, but the reasons of the judgment governed the present. It had been decided that to obtain a mandamus to the bishop it must be shown that he had declined jurisdiction or had acted in excess of it. This had not been shown in the present case. The other judges, Lord-Justice Lopes and Lord-Justice Kay, concurred in this opinion, holding that the question here was whether the bishop had honestly and fairly considered all the matters in the case. It appeared to him that the bishop had attended to all the circumstances, to everything he ought to consider. The case was carried upon appeal to the House of Lords, where, involving substantially the same points, it was argued together with the original appeal referred to in the proceedings related above. A decision was given by the Lord Chancellor representing this tribunal, Lord Bramwell and Lord Herschell concurring, July 20, affirming the decision of the Court of Appeal in favor of the Bishop of London, and dismissing the appeal, with costs. The decision does not touch the merits of the *reredo*, but simply affirms the discretion of the bishop and sustains the use he made of it.

The Church Congress.—The Church Congress met at Rhyl, Wales, Oct. 5, under the presidency of the Bishop of St. Asaph's. Discussions opposing the movement for the disestablishment of the Church in Wales were a prominent feature in the proceedings. The address of the presiding bishop was largely devoted to this subject. He had questioned statements by Mr. Gladstone that the Church in Wales was the Church of the few and the rich, and the non-conformists were not contented, and had received a reply from that gentleman corroborating his assertions. The Archbishop of Canterbury undertook to show that the Church in Wales was not an alien body forced upon the people by a conquering nation, but was a lineal descendant of the Church originally established in Wales. The first two topics of the stated discussion also bore on the same subject. They were: "Church Revival in Wales: its Rise, Progress, and Future Prospects," discussed by Canon Bevan, the Dean of St. Asaph's, Sir Robert Cunliffe, and the Bishops of Chester, Ripon, Llandaff, and Bedford, and "The Church in Relation to Nonconformists: the Points of Agreement and Difference, and the Possibilities of Co-operation," by the Rev. H. A. James, Earl Nelson, the Rev. J. Morgan, Mr. G. Harwood, and the Archbishop of York. The other subjects considered in the Congress, with the persons who made the opening addresses upon them, were: "The Work of the Church in the Poorest Quarters of our Cities," by the Bishop of Bedford; "In Industrial and Mining Districts," the Bishop of Wakefield; "And how to extend her Work in Connection with State Agencies and Voluntary Organizations," the Rev. A. H. Bayne; "Criticism of Holy Script-

ure, and the Church's Gains thereby in the Confirmation of her Witness," Prof. J. J. Lias; "Juster Statement of Truth," Rev. Prof. Ryle; "Confronting New Problems," Archdeacon Wilson; and "The Historical Accuracy of the Bible," Theo. G. Pinches; "Foreign Missions: Qualification of Missionary Agents, and the Best Means of obtaining them," Mr. Athelston Riley; "Reflex Benefits on the Church at Home," Bishop Blythe, of Jerusalem; and "The Society System and its Improvement," Rev. W. R. Churton; "Church Education: its Present State, and how to improve it in Universities and Public Schools," Rev. J. H. Maude, of Hartford College, Oxford, and Prof. Rendall, of University College, Liverpool; "Intermediate and Grammar Schools," Archdeacon Edmonds, of St. David's College, and Principal Gent, of St. Mark's College; "Elementary Schools" and "Church Training Colleges, Residential and Day," Principal Reichel, of the University College of North Wales. Papers on church music, English and Welsh, were read, with illustrative examples, by the Rev. Owen Jones, the Rev. C. R. Stewart, and Mr. E. Griffith. The subject of "The Divine Personality, and the Bearing of the Same on the Individual Life," was discussed by the Rev. J. H. Bernard, Canon Moberly, and Sir George Stokes. On the last day's sessions of the Congress the subject of "Aids to the Life of Godliness, their Place and Use," was discussed under the headings of "Prayer," by Archdeacon Howell; "Meditation," by the Rev. Principal Chavasse; "Fasting," by the Rev. W. Lock; "Almsgiving," by Mr. T. Ll. Murray; and "Holy Communion," by the Rev. C. J. Ridgeway. The second subject was the "Parochial System," under three headings: "Deficiencies, and how to meet them," by the Rev. Cecil Hook; "Its Relation to the Diocese," by the Dean of Manchester; and "Its Relation to Church Societies," by the Rev. the Hon. C. J. Littleton.

ARCHÆOLOGY. American. Who were the Mound-Builders?—The thesis that the mound-builders were Indians is sustained by Mr. Gerard Fowke, who argues that the civilization attributed to them is exaggerated, and that they had few, if any, resources not possessed by modern Indians, and were really no further advanced than the most intelligent of the tribes; and, on the other hand, that many of the Indian tribes were settled and organized agricultural peoples, living in similar conditions to those which it is assumed must have surrounded the mound-builders. The author also cites traditions existing among the Indians of tribes who built mounds. His views were controverted in the "American Antiquarian," which, while it admitted that the Indians built mounds, held that there were other and more extensive mound-builders before them. Dr. Cyrus Thomas has shown, from surveys of the circular, square, and octagonal earthworks of Ohio, that the geometrical accuracy of those structures has been exaggerated. While some of the square and circular works closely approximate regularity, none of them are perfect, and the octagons are less regular. There is nothing in them or connected with them contradictory to the theory of their Indian origin, except that a few of them nearly approached true geometrical figures. It is admitted that Indians can lay out true circles of moderate size, and

that they are less able now to perform many things which necessity formerly compelled them to practice.

The Ruins of Fort Ancient.—A description of Fort Ancient, on the Little Miami river, in Warren County, Ohio, which is asserted to be the greatest of all prehistoric earthworks in the Mississippi valley, has been published by Mr. Warren K. Moorehead, based upon surveys made by himself with Mr. Gerard Fowke and Mr. Clinton Cowen. The fort is situated on a plateau close to the river bank, at a height of 260 feet above low water and about 900 feet above the level of the sea. Its irregular contour is 18,712 feet in length, but a diameter drawn from north to south is only 4,993 feet long. The structure consists of two large inclosures, called the old and new forts, connected by a narrow passageway, at the southern end of which, where it is narrowest, is the "Great Gateway." Opposite this, at about one third the length of the passage, is the "Crescent Gateway." The space between these gateways is called the "Middle Fort," and appears to have been the strongest part of the work. Many graves, skeletons, and remains of human work were found in and around the fortifications, and evidences of an ancient village site in the valley. The whole convinces the author that the work was built for defense, and that it was a rallying point for a large population inhabiting a district of considerable extent, and was often the scene or witness of fierce battles. A high opinion is expressed of the ability of the constructors—of their patience in carrying, with their imperfect machinery, so large a work to completion; of their judgment in selecting the site, "the best for the purpose which the Ohio valley offers"; of the skill with which the walls are carried around the entire inclosure; of the care with which weak and exposed points were strengthened; and of other features of their engineering. Their skulls also indicate the possession of a higher intelligence than the majority of the tribes whom the settlers of western Ohio found there. Mr. Moorehead believes that they were Mandans. The site of Fort Ancient has been bought by the State of Ohio, and will be preserved as a public park.

The Mounds of Tennessee.—The name "stone-grave men" is applied by Mr. John P. Thruston, of the Tennessee Historical Society, to a race whose dead were placed in box-shaped graves made of stone slabs, often constructed with much care. A hundred or more of these graves are occasionally found, arranged in tiers or layers, in a single burial mound, with utensils and treasures deposited in them which tell much of the conditions of their domestic life. The remains of forts, villages, and settlements of the same people have been discovered in considerable numbers. The inscribed stones, idols, images, totems, potteries, pipes—of chipped stone, smooth stone, copper, bone, and shell—betoken an artistic taste and technical skill beyond those of our Indians and of the mound-builders of the States farther north, and are more on the level of the best New Mexican work. Some finely finished large flints, designated as scepters, and ceremonial implements are remarkable. The most remarkable articles, however, are shell gorgets, carved with intricate figures in which the human form may be

discerned, the style of which suggests Mexican and Central American work. One of them, from the MacMahon mound, Sevierville, represents two human figures in combat, and is regarded as the highest example of aboriginal art ever found north of Mexico. A unique stone in the collection of the Tennessee Historical Society has engraved upon it the representation of a group of mound-builders, with their banners, weapons, costumes, and manner of dressing the hair fully shown. The relics afford evidence of a trade that was perhaps coextensive with the continent. The author's study of the ancient houses suggests comparison with those of the Mandans.

Palæolithic Implements in America.—In Prof. Otis T. Mason's survey of the archaeology of the Potomac region, stone implements are represented as found in profusion in the fresh-water portion of the lower Chesapeake drainage. But while polished axes are found here and there, the polished implement is the exception, not the rule, especially on the higher ground. The chipped implements have also a ruder appearance than those from regions where finer varieties of stones are accessible. Mr. Thomas Wilson has found evidence of two periods of occupation of the region—the one palæolithic and ancient, the other neolithic and modern. The camp sites along the water courses yield many chipped arrow heads, spear heads, knives, polished implements, soapstone vessels, and pottery; while the hills back from the river, wanting in these, furnish coarser, flaked *artefacts*, mixed with broken implements and spalls. Mr. Wilson describes the palæolithic instruments of the District of Columbia and the United States generally as always chipped, never polished, almond-shaped, oval, or sometimes approaching a circle; having their cutting edges at or toward the smaller end, while neolithic stones have them toward the broad end; as frequently made of pebbles with the original surface sometimes unworked in places; and as exceedingly thick when compared with their width. They were usually made of quartz, quartzite, or argillite, while the neolithic man used any material that could be ground to a smooth surface. They are not known to have been used by the American Indians, who when found by Europeans were in the neolithic stage. Not one of the Indian monuments that have been explored has yielded palæolithic implements. The articles found in the District of Columbia are of the same type as palæolithic implements found in the Trenton gravels at Little Falls, Minn., in Jackson County, Ind., at Claymont, Del., and at Loveland, Ohio; and all together contribute to prove that a palæolithic period existed in the United States.

Man in the Glacial Age.—Some important facts are adduced by Prof. G. Frederick Wright as having come to light during the past two years bearing upon the connection of man with the ice age in North America. One of these is the discovery of the clay image that was found in a well at Nampa, Idaho, described in the "Annual Cyclopædia" (1889, page 18). Another is the finding, by W. C. Mills, of a flint implement of palæolithic type in the gravels of the Tuscarawas river at Newcomerstown, Ohio, fifteen feet below the surface of the glacial terrace border-

ing the valley at that place. The implement has upon it the patina characteristic of the genuine flint implements of great age in the valley of the Somme, and is recognized as having all the features of a true palæolith. It is represented in the engraving (one fourth the real diameter) by the



THE SMALLER IS THE PALÆOLITH FROM NEWCOMERSTOWN, OHIO, THE LARGER FROM AMIENS (FACE VIEW).

side of a palæolith from the valley of the Somme, of which it is an exact counterpart. The third fact is the discovery, by C. McTarnahan and J. H. Neal, respectively—one a surveyor, the other a mining superintendent—of two mortars of stone in the undisturbed gravel under the lava of Table mountain, Cal., the same formation in which the Calaveras skull was found. The mortar found by Mr. McTarnahan was about one hundred feet below the surface. Other objects of human manufacture were found by Mr. Neal in the same gravel, and a pestle by Clarence King about twenty years ago.

Ancient Mining Works.—Writing of the antiquity of the aboriginal mining works in North America, Prof. John S. Newberry says that the ancient copper mines on Lake Superior were abandoned not less than four hundred years ago, for the heaps of rubbish around the pits were covered with forest trees of the largest size. The old copper mines of North Carolina, and the quarries of serpentine in the

Alleghanies, show like evidence of antiquity. Pits observed in the ground around Titusville, Pa., proved to be relics of the excavations of primeval oil gatherers, and in one of them an old well was found which had been cribbed up with timber, and contained a ladder like those

which have been found in the old copper mines of Lake Superior. Traces of a similar well have been observed at Enniskillen, Canada, and depressions in the surface like those on Oil Creek have been noticed at Mecca and Grafton, Ohio. Ruins of an ancient lead mine exist on the Morgan farm, near Lexington, Ky., in the form, where they have not been disturbed, of an open cut from 6 to 10 feet wide, of unknown depth, now nearly filled with rubbish. On either side of this trench the material thrown out forms ridges several feet in height, and these are overgrown with large trees.

A Curious Earthwork.—An earthwork at Foster's Station, on the Little Miami river, described by Prof. F. W. Putnam, is remarkable for a ridge, more than half a mile long, from 20 to 50 feet wide, and from 8 to 10 feet deep, of well-burned clay, and including masses of burned limestone, clinkers, charred logs, and heaps of ashes of from 1 to 40 bushels. To have burned all this clay must have required a heat like that of a Bessemer furnace. The rim of burned stuff is backed by an escarpment of well-laid stone wall, which probably once extended down to the water.

Mounds in Dakota.—Thirty-nine mounds in North Dakota, examined by Henry

Montgomery, consist of 1 beacon mound, 36 burial mounds, and 2 mounds designated as artificial. The burial mounds were of two kinds: The ordinary, consisting of a circular, rounded, or conical heap of earth, clothed with grass, and rising generally to a height of several feet above the surrounding level and containing one or more vaults symmetrically disposed. The skeleton was generally found in a crouching posture, with its back against the wall and face toward the center. Charred poles were encountered in digging for the vaults. The second kind had no wood and no burial chambers, and the bones in them were broken and scattered. A third kind of mound, hardly distinct enough for separate classification, contained a layer of clay that seemed to overlie many human skeletons.

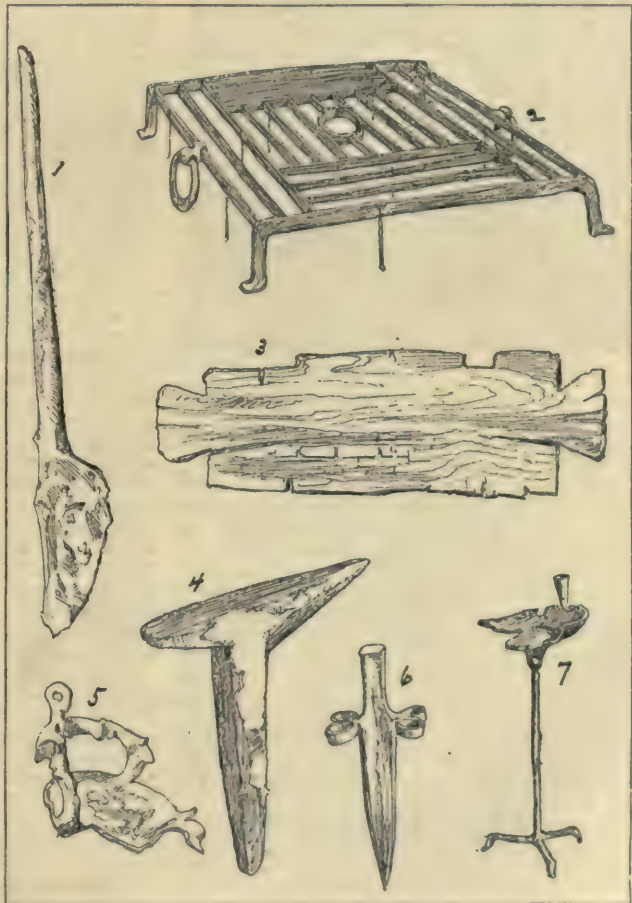
Mounds in Manitoba.—The Winnipeg mound region, Manitoba, includes a district 400 miles long from east to west, and running from the international boundary north to at least latitude 50°. About 60 of the mounds

have been seen and 10 opened by Prof. George Byles, of Manitoba College. Numerous skeletons were exhumed, with large quantities of charcoal, red and yellow ochre, and birch-bark charcoal; and of manufactured articles, stone implements, scrapers, gouges, chisels, axes, mauls, conjurer's tubes, gaming stones; breast ornaments, whistles, beads, etc., of bone; articles of shell and horn; fish spears, pottery, copper implements; and near one skeleton two lumps of arsenical pyrites. All mounds were circular, and all on prominent headlands, and the majority contained skeletons. Some of them were thought to date from the beginning of their central parts, four hundred years back.

England. Excavations at Silchester.—

The first discovery of traces of the remains of Roman occupation at Silchester, the Roman Calleva Atrebatum, near Reading, were made in 1833, when a series of baths were discovered and relics were recovered representing the whole period of the Roman domination from the time of Caligula till the evacuation of the island in the reign of Arcadius. Excavations were next begun in 1864, by the Rev. J. Gerald Joyce, which revealed the forms of some of the Roman houses. A more thorough system of excavations was begun in June, 1890, on the estate of the Duke of Wellington. Besides the plans of houses and lines of streets, large patches of mosaic floors were found, rooms heated by hypocausts of various construction; fragments of painted wall plaster, showing that the rooms were richly decorated with color; a series of shallow refuse pits which yielded dry rubbish, with potsherds, bones, etc., occasional coins, objects of bronze, and fragments of glass vessels. In one pit were about 50 objects in iron, with a perfect scale-beam of bronze. The iron articles furnished, with one exception, the largest series of tools yet found in Britain, including chisels, axes, hammers, gouges, anvils, files, a rasp, a carpenter's large plane, a pair of blacksmith's tongs, a pair of pincers, plow-coulters, a curiously shaped shoe of the kind usually called a hippo-sandal, and several objects of doubtful use, all in a good state of preservation, with the edges of the cutting-tools still sharp. A well was lined throughout with oak boarding, ingeniously dove-tailed together, and fragments of the wooden bucket and a curious metal vessel at the bottom. One of the most interesting objects was a gridiron, or portable cooking stove, unique in England. In the re-

gion of the forum were a basilica, a hall 280 feet long, having an apse at one end and an aisle clearly marked by the site of pillars; three great chambers on the west side of it; on the east side the forum with its public office; and on the south and the north rows of shops. A perfect ground plan of a villa was laid bare. It embraced a cloister built round three sides of a quadrangle, the fourth side remaining open, with a small garden inclosed, while a larger garden lay outside. Behind the cloister were large rooms for summer and winter use, of which the latter were warmed by hot-air pipes connected with underground stoves, which could be seen. Behind these chambers was another cloister, and at the back were the domestic offices. The wall, the whole of which is nearly complete, is 2,670 yards long, and incloses a polygonal area of 100 acres. It was built



DISCOVERIES AT SILCHESTER, ENGLAND.

1, couler of a plow; 2, gridiron; 3, oaken board, from a well-curb; 4, anvil; 5, hippo-sandal; 6, tent-peg; 7, lamp.

without tiles, and was composed of alternate layers of bonding stones, mortar, flints, etc. The gates were recessed. The excavations were continued during the season of 1891, with discoveries of other objects, including bronze bucket handles,

a bronze saucepan, a bronze figure of a goat; the remains of buildings that seem to have been constructed round an open square or garden; and facts which, as a whole, give valuable additions to our knowledge of Romano-British building, and show the differences between the town houses of Silchester and the country houses or villas; while both differ in a remarkable way from the typical Roman house as seen in Italy.

The Altar of Vinovia.—The Roman site called Binchester, on the banks of the river Wear, near Bishop Auckland, Durham, represents the ancient Vinovia. Some interesting discoveries



ROMAN TILE, FOUND AT SILCHESTER, ENGLAND.

were made there a few years ago by Mr. John Pond. In the last year an altar has been unearthed in a state of excellent preservation. It is 4 feet 3 inches high by 1 foot 2½ inches long, and 1 foot ¼ inch broad, and has sculptured on its sides the four principal sacrificial implements, the "recuris," or axe, the "culter," or knife, the "patera," or dish, and the "præfericulum," or jug. It also bears an inscription which has been made by expanding the abbreviated words to read—*Jovi Optimo Maximo, et Matribus Ollototis, sine Transmarinis, Pomponius Lonatus, Beneficiarius Consulis, Pro Salute sua et suorum, Votum solvit libenti animo.* From the titles given to the mother goddesses, who were favorite objects of worship at Vinovia, it is conceived that the consular beneficiaries and others who erected the altar came from Olot, in the northeast of Spain, near the Mediterranean Sea and the frontier of France.

Rome and Italy. A Memorial of Horace.—A flattened column or oblong slab was uncovered during the excavations for the Tiber embankment, on which is inscribed the official record of the public games celebrated by Augustus in the year 17 B. C. The decree of the Senate and the regulations enforced by the executive committee are followed by a list of the necessary prayers and sacrifices and the order of contests. Then comes an announcement that a choir of twenty-seven youths, and as many maidens, will sing the "Carmen Seculare," written by Quintus Horatius Flaccus.

In the same locality the workmen have dis-

covered twenty-five additional fragments of the great map of the old city which formerly stood in the forum of Augustus. When this map was destroyed by fire or earthquake many of the pieces were thrown into a heap of broken building materials, and finally found their way into the walls of the old Alfieri palace, which have now been unearthed. The Minister of Public Instruction has ordered excavations to be made in search of further fragments of the map.

Remains of Public Works.—Portions of the viaduct (on the line of the road now called the Lungaretta) traced by Æmilius Paulus, in the sixth century of the city, across the lowlands of the Trastevere, in correspondence with the bridge of Æmilius Lepidus (the Ponte Rotto, or Ponte di Santa Maria, destroyed in 1886), have been discovered under the Piazza di San Crisogono. The structure rests on piers 6 metres wide, 2.25 metres thick, and the arches are a little more than 3 metres in diameter. It is built of blocks of red tufa, well squared and joined without cement. A pier or landing-place some five hundred feet above the bridge of St. Angelo, discovered in the prosecution of works for widening the Tiber, is supposed to have been constructed for a landing-place for the marbles used in the buildings of the Campus Martius and of the Pincian and Quirinal Hills. It is a raised causeway, built of blocks of tufa, laid crosswise without cement, and coated with an outside facing of travertine. On each side of the causeway are landings nearly level with the water, of concrete, faced with a palisade of oaken beams, the palisade being faced on the inner side with sheets of lead.

A Group of Statuary.—A colossal head of archaic workmanship, found in the gardens of Sallust and kept in the Ludovici museum, and heretofore described as a "head of Juno, in the old style," has been identified by Profs. Petersen and Benndorf as having been probably the statue that was worshiped in the temple of Venus Erycina (founded A. U. C. 512). It is connected by them with a "parapet" of Parian marble found in the same neighborhood in 1887, on which are the three bas-reliefs, (a) a veiled female figure in the act of burning incense, (b) a naked female figure in the act of playing the double flute, both sitting on a pillow or small mattress, and (c) a young female figure emerging from the water with the help of two female attendants. The piece was explained by Petersen as belonging to the throne on which the statue of Venus Erycina or Sallustiana was seated. Petersen supposed the central bas-relief (c) to represent the birth of Venus, and the side pieces as personifying (a) the sacred and (b) the profane love. He has caused a restoration to be made in plaster of the figure and of the throne, and the two fit together perfectly.

A Roman Bride's Treasures.—In the tomb of Crepereia Tryphæa, near the ancient gardens of Rome, the occupant of which was indicated by the wreath of myrtle leaves in the coffin to have been a bride, was found a doll of oak wood, about a foot long, well jointed, and having a body carved with unusual care and fidelity to nature. It wore a head-dress of the style that prevailed in the age of the Antonines and like that of the first Empress Faustina. Various ornaments and remains of articles of clothing were

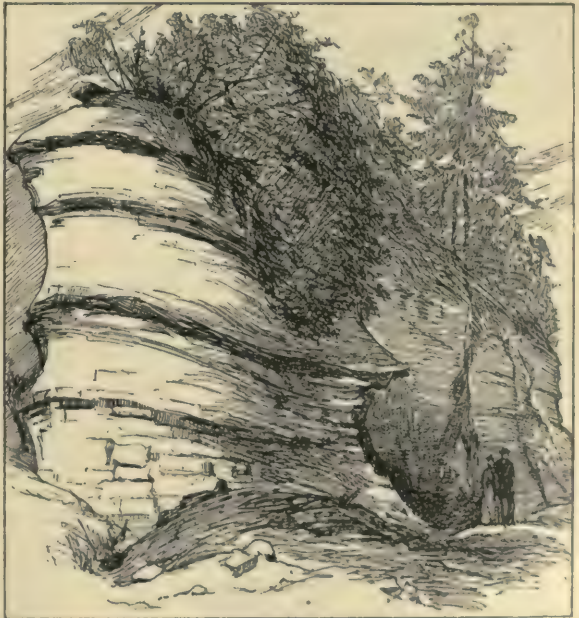
also in the coffin, including the myrtle wreath, which had been preserved by the water that filled the grave and had acquired nearly the consistency and hardness of parchment; a clasp of silver, very much oxidized, and decorated with a vervain pattern; and several gold rings, one of which had a bezel of smooth dark glass, a second with an onyx setting bearing the name Feiletus in relief, and the third an intaglio of red jasper on which were engraved two hands clasped and holding ears of wheat—a symbol of marriage. To a gold ring in the left hand of the doll is soldered an elegant miniature key, while in its right hand is another pair of rings. A clasp is set with an amethyst engraved with a design of a winged griffin pursuing a doe—symbols of Apollo and Diana—and to it are appended two delicate chains with ivy-leaf pendants. There were also an amber hair-pin, two small combs, earrings, a necklace, and two mirrors.

The Tombs of Syracuse.—The excavations made by the Italian Government in the Hellenic and prehistoric necropolises in the neighborhood of Syracuse have brought to light a large number of tombs, with ornamented pottery of most primitive forms, bronzes, among which are swords dagger-shaped like those of Mycenæ, and bone ornaments of a peculiar character. Some tombs were found with the entrance or *dromos* closed by a stone slab with ornamentation sculptured in relief in a strange exotic style, perhaps Phœnician. The finding of earthworks and objects presenting the genuine Mycænæan type is evidence of the extension of Mycænæan culture to this island.

Greece. Archæological Schools at Athens.—The oldest of the established institutions for the prosecution of archæological research in Hellenic lands is that of France, the *École Française* at Athens, which was founded in 1846. It belongs to the French Government and is supported by it, and is under the direction of distinguished scholars. The Imperial German Archæological Institute, founded twenty-three years after that of France, is supported by the German Government. It has been the agency through which some of the most valuable discoveries in the history of Greek archæological research have been made, the most important of which are those at Olympia. The American School of Classical Studies was founded by the American Archæological Institute, and was opened under the auspices of some of the leading American colleges in 1882. It is intended to afford a center for the final higher study, by graduates of American colleges, of classical antiquity, and to be a directory for the exploration of ancient sites. It aims to help artists and architects who resort to Greece for study, and makes provision for special students. It occupies a handsome building on the southern slope of Mount Lycabettus, which was procured and furnished by the contributions of friends in the United States. Instruction is afforded gratuitously. The school

was at first presided over by a director chosen for one year from the various colleges in the United States associated with the school; but in 1888 the plan was modified, and, while an annual director continued to be appointed, the office of chief or permanent director was established, and Dr. Charles Waldstein, then director of the Fitzwilliam Museum and Professor of Archæology in the University of Cambridge, England, was chosen to fill it. Previous to 1890 the school had carried on excavations at eight sites in Greece, with important results; while previous to this the American Archæological Institute had made some interesting and important excavations at Assos, in Asia Minor. The British School of Archæology was founded in 1886, and had twelve students in attendance at its last session. It is supported by subscriptions, and gives courses of lectures and conducts excavations. In past years it has explored the antiquities of the island of Cyprus. The chief objective point of its researches in 1890-'91 was the site of Megalopolis, in western Arcadia, the city founded by Epaminondas.

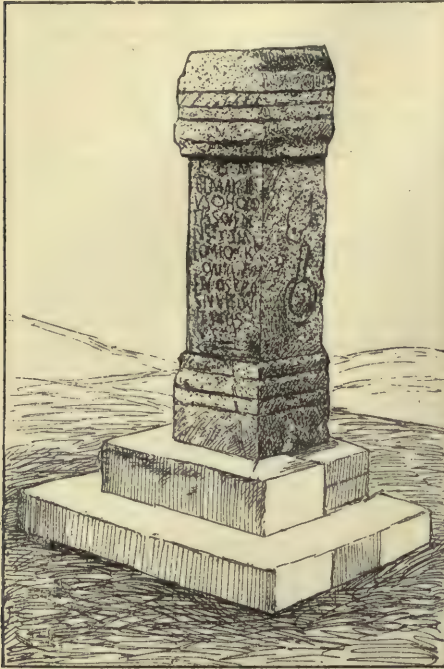
The Temple at Delphi.—The Archæological Institute of America and the American School at Athens negotiated during 1890 with the Greek Government for the concession of the site of Delphi and the privilege of excavating there. The concession was made conditional on the payment of \$80,000 as an indemnification for the expropriation of the village of Castri, which stands upon the site and would have to be re-



OLD ROMAN WALLS, SILCHESTER, ENGLAND.

moved. Delay was incurred in obtaining the subscriptions to this fund, but the amount was made up, and the friends of the scheme believed, in November, 1890, they had secured the concession, when it was given to the French school.

Relics at Plataea.—In the work of the American School at Plataea, which was completed in April, 1890, the site was thoroughly surveyed; the walls, which are more than two and a half miles in circumference, were measured, and a paper on the topography of the battle-field of Plataea was



ROMAN ALTAR, FOUND AT BINCHESTER, DURHAM, ENGLAND.

prepared, to be illustrated by a new map. Excavations were carried on at several points within and without the city walls; but neither of the three important temples of Athene, Here, and Demetri was discovered. Among the interesting inscriptions brought to light was a slab containing a part of the famous edict of Diocletian, "De Pretiis Rerum Venalium," a part of the preamble of which, in Latin, had been found in the previous year. The present part, which was of the body of the edict, was in Greek. It concerns the price of textiles, and gives prices that had been hitherto unknown. Another inscription records dedications on the part of women to a goddess, and contains many female names.

The Tombs at Eretria.—The American School gave its attention, in 1891, to the exploration of Eretria in the island of Euboea, a city mentioned by Homer, destroyed by Darius in the Persian war, B. C. 490, and subsequently rebuilt; after which it became the seat of an important school of philosophy, under Menedemus, a pupil of Aristotle. The theatre was found to have a stage approximately nine feet high, with five rooms in the rear of it. It was between fifty and sixty feet long, and about seven feet wide. In front of the stage building was a low, narrow platform, with an arch through the middle extending to the third of the five rooms; while a smaller arch ran from the center

of the orchestra circle toward the stage. The survey of the walls proved that the new city occupied the same ground as the old. The tombs in the cemetery were of all epochs. In some cases as many as four were found made one upon another, the succeeding ones having been built without regard to their predecessors. In the Byzantine graves the articles found, which had been deposited with the bodies, were potteries of coarse material and workmanship. The Roman tombs were built of slabs of stone, were well constructed, and contained, besides vases of glass and clay of not great value, golden rings, earrings, necklaces, bracelets, and silver trinkets. The Grecian graves contained vases, terra-cotta figures and masks, and gold and silver ornaments; and the lowest, or archaic graves, contained only archaic vases. In one grave, of a group of six, were found lying upon the breast of the skeleton a mass of two ounces of gold cut into two hundred leaves of ivy and oak, on which the veins of the natural leaf were plainly represented. Besides this were found in the same group, which seemed to constitute a family tomb, Grecian vases; a terra-cotta mask of the god Pan; terra-cotta statuettes; seven crowns of gold; two specimens of the stylus; a gold ring with a lion rampant as a seal; earrings composed of doves swinging in a hoop of gold, with eyes of precious stones, feathers of granulated gold work, precious stones set in the wings and the breasts, and the feathers of the tail so arranged as to move with the swinging of the pendant; and a number of white vases, or *lekythoi*, of the kind hitherto regarded as peculiar to Athens. An inscription on one of the graves gave the name of the occupant as [B]IOTH [A]PIXTOTEAOT, or Biote, daughter of Aristotle. The gold pen in the grave next to this, and belonging to the same family, might be regarded as denoting that its occupant's profession had been literary. The question arose whether this family was that of the great philosopher Aristotle. The facts make this seem possible, but do not afford clear evidence. Aristotle died at Calchis, the adjoining city to Eretria; and a terra-cotta statuette found in the tomb agrees with the description given by Christodorus of a statue of Aristotle which he saw in a gymnasium at Constantinople, "standing with its hands folded together." There is, however, no evidence that Aristotle was buried at Eretria instead of Calchis, although the graves run almost continuously between the two cities. There were, moreover, several Aristotles in antiquity, and the name Biote is not historically known as that of any member of Aristotle's family. The daughter named by Aristotle in his will was Pythias, child of his wife Pythias. But there is no evidence that he had not such a daughter. Dr. Waldstein believes that the tomb is that of the philosopher.

Ruins of Megalopolis.—The principal work of the British School during 1890 and 1891 was performed in Megalopolis. In addition to the discovery of a stoa with a triple line of columns, and an altar adjoining it, a large theatre in good preservation was partially dug out, the front row of seats or *ὀρθοί* of which bore inscriptions of the classical period. These seats were long benches, nine in number, one corresponding to each *κέρσις* or wedge of the auditorium. Each

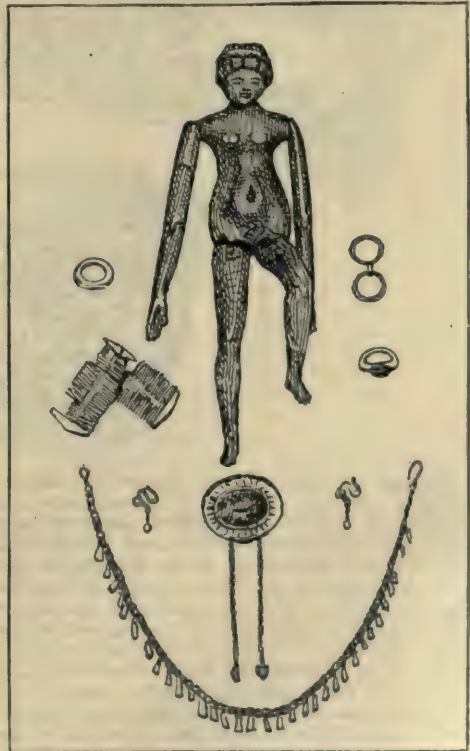
was provided with an arm at either end; and they had high backs, slightly curved, and fitting comfortably to the back of the sitter. The benches were separated by eight gangways leading to the *καλυμνες* above, while there was also a *καλυματ* at either end. Below the benches was a channel to carry off the water, and beyond that a raised stone border bounding the orchestra. The discovery of steps leading up from the orchestra was at first regarded as indicating that the theatre had a raised stage; but these steps were afterward found to have formed no part of the original plan, and the idea of a raised stage has been abandoned. But it is believed that a raised stage was added at a later date. Another building which has been cleared is supposed to have inclosed the temple of Zeus Sôtér.

The Tomb at Vaphio.—The village of Vaphio, near the Homeric towns of Amyclæ and Pharis, southeast of Sparta, is marked by a tumulus resembling in external appearance the structures called the treasuries of Mycenæ. This tomb was explored in 1889 by Mr. Tsoundas, under the direction of the Greek Archæological Office. A high interest is attached to the tomb, because its date can not be later than the eighth century B. C., and it is supposed to be one or two hundred years older. In it were found a collection of funeral offerings, consisting of vases of metal and clay, ornaments of gold and silver, bronze arms, domestic utensils, and stones engraved in an archaic style. The chief objects of interest are two gold cups, ornamented with cattle designs in *repoussé* work, in a style which was first observed in vessels found at Mycenæ, but with an excellence of conception and a fidelity to nature not previously remarked in any work of archaic Greek art. The design on one of the cups portrays a hunting scene in a hilly and rough country, where men clothed in drawers and high shoes are hunting wild bulls. One of the bulls has been caught in a large net attached to two trees, and is lifting up his head in his struggles to extricate himself. On the left a bull is dashing furiously away from the scene, overthrowing two of the hunters in his fury; while on the right a third bull is galloping away, with his heels thrown high up into the air. On the other cup is a representation of tame cattle. A man holds in his hand a rope which is passed around the leg of a captive bull, while farther on are three bulls standing quietly in their pasture. The drawing in both designs is spirited and inspired by a high artistic sense, but is marked by devices to represent distance in the absence of perspective, and by exaggerations in the attitudes of the animals, that stamp it as of an archaic period.

The Sculptures at Lycosura.—The labors of the Grecian Office of Excavations, under the directory of M. Kavvadias, at Lycosura, in Arcadia, were rewarded by the discovery, in the temple of Despœna, of the remains of what seem to be the works described by Pausanias as constituting the group of seated figures of Demeter and Despœna seated, with Artemis and Anytus standing beside them, by the artist Damophon, of Messene—a contemporary of Scopas, Praxiteles, and Lysippos—of whom no work was known to be extant. The pieces discovered include a female head of colossal size; another female head

and a male bearded head (of the type of Poseidon), also colossal, but rather smaller; various fragments of colossal statues, including hands holding the attributes (a torch, a snake) described by Pausanias; a large fragment of drapery with figures in relief, representing female and male forms changed into different animals (a ram, an ass, a horse, etc.); a Nereid on a sea monster; winged forms, one of which holds a torch; dolphins, eagles, and other birds; fragments of the feet of a marble throne; and four female forms terminating in double tails of snakes or fishes, apparently the supports of a throne or table.

Recovered Greek Works.—A number of literary works of great interest have been recovered through the examination of papyri in the British Museum. One of the most important of these is a copy, nearly complete, except as to the beginning and the last chapter, of the work on the Constitution of Athens, which was ascribed by ancient authors to Aristotle. It is written on the *verso* or wrong side of a papyrus, the *recto* or right side of which is occupied with a private current account of the eleventh year of the Roman Emperor Vespasian, which, together with the style of the writing, fixes the date of the copy as not very far from that time. The trea-



ROMAN DOLL AND TOILET ARTICLES.

tise on the constitution of Athens is one of 158 works containing accounts of the constitutions of various states which were drawn up by Aristotle, or under his direction, as materials for studies in constitutional history. It consists of

63 short chapters, 41 of which contain a chronological sketch of the development of the Athenian constitution, while the others are occupied with the account of the official duties of the magistrates and public bodies that existed in the time of the author. The existing text casts light on the obscure period of the kings and the legislation of Draco and Solon and their successors, and continues to the restoration of the democracy after the reign of the thirty tyrants, in B. C. 403. The genuineness of the work appears to be satisfactorily established. It has been published in the Greek text and in *fac simile*, and has been subjected to critical examinations.

Among other classical Greek documents found among the papyri are considerable fragments of the Antiope of Euripides, parts of another copy of Plato's *Phædo*, and fragments of the writings of the poet Herodas, or Herondas, which had not been known before.

vided for the appointment of European inspectors to secure the preservation of the monuments, and has promulgated regulations concerning the making of excavations and the disposition of the relics found.

The Pyramid and Temple of Medum.—Mr. W. M. Flinders Petrie's examinations of the pyramid of Medum, made and completed during the early months of 1891, have proved it to be the structure of Senefru, of the third dynasty, and therefore the oldest dated pyramid. With it is connected, still in good condition, the only pyramid temple yet found entire, also pronounced by Mr. Petrie the oldest dated building in the world. It was reached by digging to the depth of from 40 to 60 feet in the rubbish which had accumulated around the pyramid. It is joined to the east face of the pyramid, and has a front about 80 feet wide and 9 feet high, with a door in the south end of the face. A passage, parallel to the front and 20 feet long, leads to the cham-



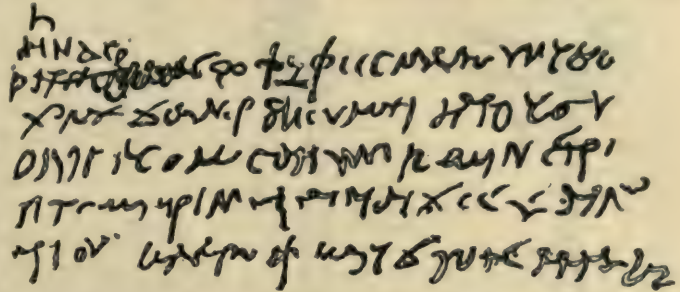
Egypt. Protection of Egyptian Monuments.—Anxious attention has been given to the danger of destruction to which many of the Egyptian monuments are exposed, either from the action of the weather or the washings of the Nile, or from the depredations of native speculators in relics. The foundations of the temple of Luxor are threatened by the stream of the Nile, the temple of Karnak is in danger, and some of the tombs and other structures have been robbed of paintings and sculptures. A memorial was addressed to the Egyptian Government toward the end of 1890 on behalf of the Society for the Preservation of Egyptian Monuments, and signed by 650 persons, asking the appointment of an official inspector to whom the care of the ruins should be intrusted. The report of the society, made July 14, 1891, related certain steps that had been taken in these matters. In consequence of these and other representations, the Egyptian Government has pro-

vided for the appointment of European inspectors to secure the preservation of the monuments, and has promulgated regulations concerning the making of excavations and the disposition of the relics found. Hence a wide doorway leads into the open air court, which is built against the face of the pyramid. The altar of offerings, which is plain, stands in the middle of the court, with an obelisk 13 feet high, rounded at the top and uninscribed, on either side of it. The walls of the temple, which is itself plain and uninscribed, are marked with the *graffiti* of visitors who came to it during the twelfth and eighteenth dynasties. The base of a statuette was found which had been dedicated to the gods of a town, Tat-snefru, by a woman named Snefru-khati. The structure of the pyramid was examined. It consists of a small stone mastaba, heightened and built around repeatedly until there were 7 steps of construction. Over all these a continuous slope of casing was added, so that the pyramid appeared with one long face from the top to the ground. The tombs had been plundered in ancient times, evidently by persons who understood their plans and ar-

rangements; but from some tombs, containing only bodies which had not been disturbed, a dozen complete skeletons were collected for study and for comparison of the types of Egyptians supposed to be of the earliest historical reign with those of later ages. Instead of being buried full length, as all the later Egyptians appear to have been, these bodies were crouched, many of them with the knees up to the chin. Crouched bodies in large earthen jars are said also to have been found at Gizeh, but to have been all destroyed. The bodies were always on the left side, with the face turned toward the east and the head to the north, without the accompaniments of funeral vessels or head-rests; but a few scraps of charcoal were found about the body. Full-length burial seems to have been practiced, too, at the same period, with funeral vessels of diorite and alabaster and head-rests. Mr. Petrie suggests that the two methods may mark distinct races—the aborigines and the conquerors—not yet fused together. The pottery of the fourth dynasty, of which a considerable quantity was found, differs from that of all later periods, and the discovery completes our historic knowledge of the pottery of Egypt. The survey of the place and the exact measurement of the pyramid are regarded by Mr. Petrie as showing that in this structure, as in the pyramid of Khufu, the proportions of the radius to the circle, or 7 to 22, prevail in the relations of height to circuit. The mode employed for laying out buildings was discovered in the course of the work. To found a mastaba with sloping sides on uneven ground, a wall (L shape) was built outside of each corner. Levels on that were drawn a cubit apart; red vertical lines on the walls defined the width of the building at the ground level; and black lines, drawn sloping down outward from the red at ground level, defined the planes of the faces. From this arrangement it was easy to start the work, no matter how uneven the foundation.

Excavations at Heracleopolis Magna.—The exploration of Heracleopolis Magna, on the site now known as Hanassieh, composed M. Naville's work for the spring season of 1891. The results were disappointing, in that no works were found attributable to the period of the three dynasties—the eighth, ninth, and tenth—when the city was the capital of the empire. In the necropolis the tombs had been plundered, and reused in later times for interments of bodies belonging to the poorer classes. Here and there were a few relics of former occupants, such as a piece of the handsome funerary cloth on which the weighing of the soul was painted, fragments of papyri, and pieces of limestone hieroglyphic tablets which were assigned to the eighteenth and nineteenth dynasties. Numerous wooden and terra-cotta tablets were found, and coarse *ushabtie*, some of which were simply little sticks on which nose and eyes had been indicated with

ink, and the name written in hieratic. On the site of the city proper, besides remains of Roman buildings and Coptic churches, a structure was found which seems to be the remains of the vestibule of one of the side entrances of the Egyptian temple. They consist of six columns, 17 feet high—one of them complete—with sculptures representing Rameses II making offerings, and the name of Menephthah in the intervals, while



FAC-SIMILE FROM FIRST PAGE OF ARISTOTLE'S TREATISE ON THE CONSTITUTION OF ATHENS.

the architraves supported by the columns were cut in a building with the cartouches of User-tesen II, of the twelfth dynasty. The vestibule was open on the water side. A few remaining layers of stones on the other sides bore an inscription recording the dedication of the building by Rameses to Hershefi, or Arsaphes (a form of Osiris), whose figure is sculptured on two of the columns. A sitting statue of Rameses II, of heroic size, in red limestone painted red, with blue and yellow striped head-dress, and dedicated to Arsaphes; a red granite statue, of natural size, without any name: a group of much-weathered kneeling figures; and a headless statue of Rameses II, symmetrical with the former one, but broken, in the opposite corner to it, were also found. Bases of columns more than 4 feet in diameter were seen *in situ*, and a few stray blocks bearing hieroglyphic signs were found. Otherwise, the whole temple had been destroyed. This temple apparently corresponds with the one described in the Harris papyrus as one of the chief temples of Egypt, to which Rameses II gave slaves.

A Collection of Priestly Mummies.—In excavating to the eastward of the temple of Queen Hatasu, at Deir-el Bahari, a pit was found containing 163 mummies, which, like the royal mummies discovered in 1891, appeared to have been removed from their tombs and concealed here—it is supposed, as in the case of the royal mummies—during the twenty-second dynasty, about 966 B. C. The coffins were of the twenty-first dynasty, and contained mummies of the priests of Ra-Amun and their families. They were deposited in a corridor some 10 or 12 feet high and 250 feet long, which was reached by a shaft 45 feet deep. The bodies were usually laid in triple coffins, some of which had been gilded, and were piled upon one another with a confusion that indicated haste. With them were baskets of flowers, funeral offerings, and seventy-five wooden statuettes inclosing papyri. The hope that was entertained at first, that these papyri might furnish valuable information, was

disappointed. They contained little else than funeral rituals.

Two wooden statues of Isis and Nephthis were found in the galleries. They were 38½ inches high, and alike except in the features of the face; were carved with correct anatomical ap-



FIGURES DISCOVERED AT THEBES.

preciation and artistic feeling, symmetrically proportioned, and in expressive attitudes. The wood was covered with a coating of color, the flesh being painted with a light-yellow ochre; the head coverings and robes white, with dark-red fillets and ribbon ornaments; the necklets, amulets, and bracelets two different greens; and the borders of the robes, near the feet, red and blue. The eyebrows and lids were dark blue, the eyeballs black, and the outlines of the nostrils, lips, and ears were delicately shown in red.

Egyptian Dogs.—In a paper on the dogs of ancient Egypt, Mr. Maspero speaks of cemeteries of dogs and their mummies at Syout, Sheikh-Fadl, Feshn, and Sakkarah, and describes one of the mummies, which has recently been opened by the German Herr Beckmann. It was a harrier, about eighteen months old, of which only the skin and bones were left, with remains of muscular tissue reduced to dust. Over the wrappings of bitumenized linen had been placed a thin mat of dried reeds, bound with cords of twisted grass. Over the part of the bundle thus made up which answered to the body was cast a network of fine cloth, so arranged as to delineate parallel rows of superposed squares along its length. The head was covered by a pasteboard mask, reproducing the physiognomy of the animal as far as possible. It was painted dark brown, except around the eyes, lips, and nostrils, which were white. The half-opened mouth showed the points of the teeth, and the ears rose above the head. Mr. Maspero suggests that it is desirable to study these dog mummies before they are destroyed, in order to determine their species and learn their anatomical structure, and what changes, if any, it has undergone.

Miscellaneous.—An inscription called the Minean inscription—No. 535 in Halévy's list—recording a battle between the south Egyptian people Madoy, and the Egyptians (Misr), or rulers and inhabitants of the Delta, is interpreted by Dr. Edward Glaser, from some of its allusions, as a contemporary record pointing to the presence of the Hebrews in the Delta during the Biblical period of their sojourn in Egypt.

In a stone discovered by Mr. Wilborn at Luxor mention is made of seven years of want in consequence of the failure of the inundations of the Nile and of the attempt of the sorcerer Chit-net to overcome the calamity. This record is treated by Herr Brugsch as evidence of the existence of a tradition of a famine corresponding with the one described in Genesis in connection with the story of Joseph. The stone is of late date.

A picture of Rameses II dedicating the edifice to Amun Ra, found on one of the walls of his temple at Luxor, furnishes a representation of the completed building. Both the great obelisks are shown, and the four masts with their flags displayed, and six colossi—two seated and four standing—outside of the pylons.

Palestine. The King of Salem.—From the study of tablets from Tel-el-Amarna relating to the affairs of southern Palestine Prof. A. H. Sayce has found that the local name of the deity worshipped "in the mountain of Jerusalem," according to Ebed-tob, the governor of the city in the time of the eighteenth dynasty in Egypt, was Salim. This reveals the origin of the name of Jerusalem itself. A cuneiform tablet has already informed us that *uru* signifies *city*, the Assyrian *alu*; *uru-Salim*, or Jerusalem, must therefore be "the city of Salem," the god of peace. We can thus understand why Melchizedek, the royal priest, is called "King of Salem" rather than of Jerusalem; and we may see in the title "Prince of Peace," conferred by Isaiah on the expected Saviour, a reference to the early history of the city. In the letters sent by Ebed-tob to Egypt, he says that he had succeeded to his royal dignity not by right of inheritance, nor by the appointment of the Egyptian king, but by virtue of an oracle of the god who is called in Genesis El Elyôn. A comparison is suggested by this account of his priestly-royal tenure, with the characterization of Melchizedek in Hebrews vii, 3. At the same time he was a tributary and "vassal" of Egypt, and the district of which Jerusalem was the capital, which extended on the west to Mount Seir and Rabbah, and on the south to Keilah and Carmel, was the "country of the king" of Egypt, who had established his name in it "forever."

Babylonia. Discoveries by Dr. Peters at Niffer.—Dr. Peters, of the American expedition to Babylonia, has communicated to Mr. Theodore G. Pinches the discovery at Niffer of two stamps of Naram-Sin and two of his father, Sargon I; three door sockets with votive inscriptions of Sargon of Agade; and several inscriptions of another king, apparently of about the same age with Sargon I (B. C. 3800), who seems to be unknown. In this inscription Mr. Pinches reads the name Erimus or Urumus. The same name occurs on some fragments from Sippara (or Abuhabbah), which Dr. Jensen has copied. These discoveries prove that the city of Niffer was one

of the oldest in Babylonia—a fact which is corroborated in the new Akkadian story of the creation, where Niffer is the first city mentioned by name. Among the finds from the temple of Bel are a number of votive inscriptions on lapis-lazuli, agate, and a chalk-like white stone, so soft that it had to be covered with a kind of enamel. They were all found in one room, in a series of booths or shops before the temple; had all been contained in one box; and were in various stages of completion, showing that this was the shop of a vender or manufacturer of objects of this kind. The inscriptions on the bulk of these belong to Kurigalzu, son of Burnaburiash, but the largest and most important of the series bears the name of a king of Babylon, which Mr. Pinches reads Kadasman-Turgu. Another similar name, Kadasman-Bel, occurs on an agate tablet of the same series. These give us the names of two Kassite kings, one wholly, the other partially, new.

Akkadian Account of the Creation.—A tablet found by Mr. Pinches among those collected by Mr. Hormuzd Rassam at Konyunjik, containing on the reverse an incantation for the purification of the great temple tower E-Zida, or Birs Nimrud, has on the obverse an account of the creation. The text, according to Mr. Pinches, may be divided roughly into sections of about ten lines each. The first section describes the time when nothing was, neither the "glorious house of the gods," neither plants, nor cities, nor houses, and not even the abyss (Hades) nor Eridu (probably a type of paradise) existed. The second section describes the making of Eridu, with its temple E-sagila, which had been founded within the abyss. Then were made Babylon, the gods, the spirits, the land, the abode of the gods, and mankind. The third section treats of the creation of animals, plants, and trees, the Tigris and Euphrates, etc.; and the fourth and last remaining section records the building of cities and houses. Merodach figures as the principal creator and constructor of all things.

Africa. Ruins of Zimbabwe.—The cyclopean ruins of Zimbabwe, in Mashonaland, South Africa, were discovered and visited several years ago by the German traveler Mauch, and are illustrated, from his notes, in Baines's works on "The Gold Fields of South Africa." They were visited again, and are described by a correspondent of the London "Times," a member of the British South Africa Company's expedition, in the summer of 1890. They are situated close to the edge of the Mashonaland plateau, at the base of a precipitous granite "kopje," or knoll, which is inhabited by one of the Mashona tribes. They are surrounded by an outer wall, running apparently round the entire kopje, which could not be traced for more than half a mile on account of the high grass and jungle. Next, are indications of a second and inner wall, which also could not be traced for any great length. Then, amid the remains of many small circular buildings, and 300 yards southwest of the base of the kopje, is "a high wall of circular shape, from 30 to 35 feet high, forming a complete inclosure of an area 80 yards in diameter. This wall (about 10 feet in thickness at the base, and tapering to about 7 or 8 feet at the top) is built of small granite blocks, about twice the size of an ordinary brick, beautifully hewed and dressed, laid in perfectly even courses,

and put together without the use of a single atom of cement. This strange inclosure is entered on its eastern side by what at first sight appears to be a mere gap in the wall; but which closer examination reveals to be what was once evidently a well-defined narrow entrance, as shown clearly by the rounded-off courses. Inside the building itself (which is most difficult to examine thoroughly, owing both to the dense undergrowth and the presence of quantities of trees hundreds of years old, which conceal traces of, seemingly, a series of further circular or elliptical walls), and close to the entrance and outer wall, here 30 feet high, stands a conical-shaped tower or turret, 35 feet in height and 18 feet in diameter at the base, built of the same granite blocks and consisting of solid masonry. Lastly, . . . on the southeast front of the wall and 20 feet from its base runs a zigzag scroll, one third of the distance round, composed of the same-sized granite blocks placed in diagonal positions."

The ruins were visited in 1891 by Mr. Theodore Bent, who found the remains of a temple adorned with phallic emblems, a phallic altar, and fragments of blue and green pottery.

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ARGENTINE REPUBLIC, a federal republic in South America, having a Constitution modeled after that of the United States. The President is elected for six years. The Congress consists of a Senate of 28 members, two from each province, and a House of Representatives containing 86 members voted for directly by the people and serving four years. One half of the House is renewed every two years, and one third of the Senate every three years. Every member of either house draws a salary of \$8,400 per annum. The Vice-President presides over the Senate, and succeeds to the presidency in case of a vacancy. On the resignation of President Juarez Celman, on Aug. 6, 1890, Dr. Carlos Pellegrini, then Vice-President, assumed the office for the remainder of the term, which expires

Oct. 12, 1892. Each province elects its Governor and Legislature, and can levy taxes and contract debts and legislate on all matters not reserved to Congress by the Constitution. The Cabinet in the beginning of 1891 was composed of the following members: Minister of Foreign Affairs, E. Costa; Minister of Finance, Vicente Fidel Lopez; Minister of Education and Minister of Justice, Juan Carballido; Minister of War, N. Levalle; Minister of the Interior, Gen. Roca.

Area and Population.—The area of the self-governed provinces is 515,700 square miles, and their population is estimated at 3,916,492. The territories have an area of about 609,386 square miles, and 170,000 inhabitants. Buenos Ayres, the capital, with its suburbs, had in July, 1890, a population of 556,160, more than one quarter being foreigners. The immigration in the past six years has been nearly 1,200,000. About three fourths of the settlers are of Italian nationality, one tenth are Spaniards, one twelfth are French, and the rest of various nationalities.

Finance.—The revenue for 1890 was estimated at \$74,370,000, namely, \$48,000,000 from customs, \$3,950,000 from municipal taxes, \$7,700,000 from banks, \$6,050,000 from stamps and the post-office, and \$8,670,000 from other sources. The total expenditures were estimated at \$67,881,884, apportioned as follow; Interior, \$16,237,406; finance administration, \$25,989,893; instruction, \$9,517,026; military expenditure, \$9,507,839; the navy, \$4,029,440; foreign affairs, \$2,600,280. The actual expenditures exceeded the revenue by \$31,000,000, and in 1891 a deficit of \$22,000,000 was looked for, to avoid which the President issued a decree reducing salaries in the civil departments and in the army and navy, which was approved by Congress.

The Army and Navy.—There is a standing army of 5,585 men and officers. Able-bodied men under forty-five are enrolled in the militia, which numbers 236,000.

The naval forces in 1890 comprised 1 ironclad frigate, 2 deck-protected cruisers, 2 monitors, 7 gunboats, 2 transports, 7 dispatch boats, 1 torpedo school ship, and 8 torpedo boats, of which 4 are armed with spar torpedoes. The "Almirante Brown" is plated with 9 inches of steel-faced armor, and mounts six 11½-ton breech-loading Armstrongs in her central battery, 1 in the bow, and 1 in the stern. A deck-armored cruiser of 3,200 tons, completed in England in 1891, showed in her trials a mean speed with natural draught of 21½ knots, with 9,000 horse-power developed by two vertical 4-cylinder engines working independent screws. She is named the "25 de Mayo." Her armament consists of two 8-inch breech-loading guns, eight 5-inch quick-firing guns, twenty-four quick-firing guns of smaller calibers, and three 18-inch torpedo guns.

Commerce.—The breeding of cattle and sheep is the most important industry. Agriculture is carried on extensively, about 6,000,000 acres being under cultivation, yielding a product valued in 1890 at \$100,000,000, the exports for the first six months amounting to \$31,865,000. The wheat area in 1889 was 2,580,000 acres. The exports of wool in 1889 were of the value of \$56,709,774; of hides and skins, \$27,352,949; of wheat, \$1,596,446; of Indian corn, \$12,977,721. The

total exports of animal products were \$89,282,715 in value; of agricultural products, \$16,936,547; of manufactured products, \$11,946,366; of mineral products, \$1,629,160; of forest products, \$793,257; of other products, \$2,228,012: total merchandise exports in 1889, \$122,815,057. The imports of textile goods and apparel were \$32,229,422 in value; of iron manufactures, \$24,727,113; of railroad and telegraph supplies, \$24,173,749; of food substances, \$18,350,904; of beverages, \$15,301,607; of timber, \$12,106,858; of coal and oil, \$7,593,810; of glass and pottery, \$6,653,646; of chemicals, \$4,756,797; of all other articles, \$13,670,978: total merchandise imports, \$164,569,884.

The exports to the United States, mainly hides and wool, in 1890 were \$5,401,697, compared with \$5,454,618 in 1889; the imports from the United States, consisting chiefly of railroad material, agricultural implements, machinery, lumber, petroleum, and cotton, were \$8,887,000 in 1890, against \$9,293,008 in 1889.

The financial disturbance of 1890 caused a large diminution in the volume of imports, chiefly in luxuries, while the exports have remained steady. The decrease of imports is partly due to the protective tariff and the growth of native industries.

Railroads.—The Argentine Republic has the completest system of railroad communications of any South American country. There were 5,798 miles in operation and 4,840 miles building in 1890. The cost of the completed lines was \$249,907,796. The receipts for 1889 were \$35,250,907 and the expenses \$24,420,152. The panic of 1890 caused railroad construction to fall off greatly; but many of the lines were already completed or nearly completed. The extension of the Buenos Ayres and Rosario line to Tucuman connects the capital with one of the most productive of the provinces. The Transandine line to connect the Argentine system with the Chilean is expected to be finished before 1894, though several long tunnels will have to be cut through hard rock.

Financial Crisis.—During the Celman régime, which ended in the financial crash followed by the revolution of July, 1890, the national treasury was robbed of \$500,000,000. The National and Provincial banks were left insolvent, having lent the money of their depositors on unsubstantial security to politicians and their friends. For three years before the economical collapse London banking houses, and Continental houses to a smaller extent, found profit in raising money from investors in Europe to start all kinds of new undertakings in Argentina, and even dealt largely in *cedulas*, which were secured loosely on real estate. The vast quantity of European gold that was poured into the country was an incentive to wild speculation and a temptation to political jobbery. President Pellegrini and the Union Civica were supported in their efforts to retrieve the financial disaster by the best classes of the people. For this it was necessary not only to make the public income and expenditure balance by economy and fresh taxation, but to rehabilitate the bankrupt public banks. An extraordinary session of Congress was called toward the end of 1890. Measures proposed by the Government were a 10-per-cent. tax on the prof-

its of private banks and 2 per cent. on their deposits; 7 per cent. on the profits of all undertakings supported by foreign capital, railroads and meat-freezing companies excepted; and a tax of 20 per cent. on the interest of *cedulas*. The last-named tax was proposed by the provincial government in lieu of a conversion scheme which the foreign and native holders of *cedulas* would not accept. The taxing of private banks would have the effect of giving the Government the use of cash for current needs, even if it drove the foreign banks out of business, since people would then be compelled to deposit in the state banks. The foreign, and especially the English, bankers were popularly blamed for precipitating the financial catastrophe. The foreign bank managers resisted the special tax on deposits. To the tax on the profits of foreign enterprises, which affected American insurance companies, the United States objected on the ground that it was a violation of international obligations.

Deposits withdrawn from the Provincial Bank of Buenos Ayres left it on March 5 with no money in its vaults. Determined to save the state banks, Dr. Pellegrini applied to the foreign banks, but they refused assistance. The Minister of Finance then proposed a new emission of paper money, two dollars to be issued against a gold reserve of one dollar. This suggestion and the knowledge of the critical condition of the banks caused gold, which had fluctuated between 250 and 300, to leap to 387. It was no longer officially quoted in terms of paper money. On Nov. 24, 1890, when it had risen to 345 and bull speculators offered 350, the Bolsa or hall of exchange was broken up by the crowd and the police closed its doors. After they were again opened for business the Government decreed that quotations should henceforth be posted, according to the plan adopted in Chili and Brazil, in shillings, francs, or marks, at the rates of foreign exchange. The dangers of trifling further with the currency were so apparent that bankers, capitalists, and merchants proposed the alternative plan of an internal loan, which the Government willingly accepted. To prevent the formal failure of the Provincial Bank, the 6th of March and the succeeding day were declared public holidays, and the suspension was prolonged by new decrees till the 14th. The private banks came to the assistance of the Government on the condition that the taxes on foreign capital should be removed. The proposed new loan of \$100,000,000, bearing 6 per cent. interest, with 2 per cent. sinking fund, was offered at 75. The friends of the late Government denounced the plan and called for a fresh issue of bank notes. Consequently only \$41,000,000 was subscribed, \$23,000,000 by Argentinians and \$18,000,000 by the foreign banking houses. The suspension of payments of the Provincial Bank and the National Bank was ordered till the 1st of June, the Government assuming their liabilities, depositors being allowed the option of taking internal bonds for their deposits. The ministers elaborated a plan for the fusion of them both into a new institution to be called the Bank of the Republic. The Government stopped work on harbor improvements and state railroad construction in consequence of its financial difficulties. Interest was defaulted on *cedulas* of which the coupons

were payable on April 1. Congress was opened on May 9 with a message from President Pellegrini, giving reasons against a new issue of paper, and recommending a silver instead of a gold basis for the currency. Gov. Costa, of Buenos Ayres, having refused to accede to the proposed fusion of the two state banks, the Government brought in a bill for the creation of a new national bank with a capital of \$50,000,000, of which \$30,000,000 should be in paper and \$20,000,000 in gold. Authority was asked to assume the notes of provincial banks on their giving up their guarantee bonds and specie reserves.

The indefinite extension on June 1 of the suspension of the state banks was the cause of a panic, and this gave occasion for a concerted run on the private banks. Gold leaped up to 450. The Bank of Italy paid \$13,000,000 over its counter in two days, and then closed its doors. The French Bank of the River Plate, the new Italian Bank, the Commercial Bank, and the Spanish Bank suspended. The London and River Plate Bank had drawn from Rio de Janeiro and Montevideo reserves sufficient to meet all demands. On June 11 both houses of Congress passed over the President's veto a bill granting a *moratorium* or general suspension of all debts and obligations to pay money on demand or at fixed dates, with the exception of taxes, for six months. Two days later the period was reduced to three months, and on Aug. 12 the *moratorium* was repealed, after the Senate had voted a bill creating the new Bank of the Argentine Nation to liquidate the old National Bank and take over its privileges, for which purpose a new issue of \$50,000,000 was authorized. The redemption of the coupons on National *cedulas* was postponed for a year. An agreement was made with the European creditors through a number of their representatives, called the Rothschild committee, whereby the Argentine Government is relieved from the immediate payment of the debt charges falling due in the next three years, the interest being funded and added to the principal of the debt, which will increase the annual interest by \$4,000,000 when the payment of interest is resumed. A proposal to issue \$45,000,000 of forced paper currency for the foundation of the National Argentine Bank was agreed to by the House of Deputies, but on Oct. 14 the bill was defeated in the Senate.

Political Disturbances.—The friends of the deposed Administration, who were disposed to lay the blame for the financial distress upon European financiers, and who charged the President and the Union Civica with accepting extortionate terms and truckling to the foreign creditors, still formed an active political organization, and were very numerous in Cordova and the districts that had supported the late President Ceiman. The question as to who should succeed Dr. Pellegrini in the presidency agitated the country, as the elections were to be held in the following year. Gen. Roca and the other leaders of the Union Civica fixed on Gen. Mitre as their candidate, and he came from Europe in March, 1891, to plan the canvass and advise with the men in power on the political and financial situation. Political disturbances had already broken out. On Feb. 14 a conspiracy was discovered in the city of Buenos Ayres which was said to have

for its object the assassination of members of the Government. Officers who had sided with Celman in the revolution of 1890 were ordered to the frontier, and forty of them left the country. On Feb. 19 a boy attempted to kill Gen. Roca, grazing his neck with a bullet as he rode in his carriage. On the day following a state of siege was declared in the capital. A riot occurred in Cordova, in which the troops took part. The movement was begun at Santa Rosa, and spread to Jalumbra, Rio Cuarto, and the capital of the province, the whole of which was placed under martial law. In elections for deputies in Buenos Ayres the Government gained several seats. The siege was raised on March 15, before the elections were over. A conspiracy among the police of the capital was promptly put down. The navy and a part of the army were opposed to the Mitre-Roca coalition, and the hope that Gen. Mitre would harmonize the parties was found to be groundless.

On May 1 Gen. Roca resigned his post as Minister of the Interior, and was succeeded by José Zapata. On May 22 a new insurrection occurred in Cordova, which was suppressed by the troops after a street fight of eleven hours, during which 25 persons were killed. Minister Zapata declared in Congress that this revolt was a part of a general plot to convulse the republic. In June the Province of Catamarca was the scene of an insurrection which was mainly due to local causes and was successful, the provincial authorities being supplanted by a provisional government. A few days later Gov. Rojas, of Santiago del Estero, who was accused of nepotism, was deposed by a popular rising, and Gorostiaga, the former Governor, was reinstated. The troops interfered in both provinces and restored the legitimate authorities. Owing to dissensions between the Liberal and the Radical sections of the Union Civica Gen. Mitre in the autumn renounced his candidature for the presidency, and he and Gen. Roca formally withdrew from active political life. During the elections in October rioting and loss of life occurred in the cities of Tucuman and Cordova.

ARIZONA, a Territory of the United States, organized Feb. 24, 1863; area, 113,020 square miles. The population, according to each decennial census, was 9,658 in 1870; 40,440 in 1880; and 59,620 in 1890. Capital, Phenix.

Government.—The following were the Territorial officers during the year: Governor, John N. Irwin, Republican; Secretary, Nathan O. Murphy; Treasurer, John Y. T. Smith, succeeded by William Christy; Auditor, Thomas Hughes; Attorney-General, Clark Churchill, succeeded by William Herring; Superintendent of Public Instruction, George W. Cheyney; Commissioner of Immigration (until the abolition of the office in February, by act of the Legislature), John A. Black; Railroad Commissioners, appointed in June, pursuant to an act of the sixteenth Legislature, H. B. Lighthizer, E. B. Gage, G. W. Beecher, and J. S. O'Brien; Chief Justice of the Supreme Court, Henry C. Gooding; Associate Justices, Joseph H. Kibbey, Richard E. Sloan, and Edward W. Wells. Judge Wells was appointed early in the year, pursuant to the act of Congress approved Oct. 1, 1890, providing for a fourth justice for the Territorial court.

Finances.—The total bonded debt of the Territory on Jan. 1 was \$621,000, and the floating debt, represented by unpaid warrants, \$124,442.19, making the total indebtedness \$745,442.19. On Sept. 12 the bonded debt had been reduced to \$606,000, while the floating debt had increased to \$190,030.53, making a total of \$796,030.53. Although a tax of 71 cents for Territorial purposes was levied this year on each \$100 of valuation, its proceeds were insufficient to defray current Territorial expenses, pay interest on the debt, and meet such of the principal as matured. A constant increase of unpaid warrants therefore results.

In addition to the Territorial debt, there is a county debt, bonded and floating, of \$2,175,604.74, and a city debt, bonded and floating, of \$182,987.80.

The total assessed valuation of the Territory for 1891 was \$28,270,466.28, an increase of \$220,231.55 over the valuation for 1890. Included in the assessment were 3,364,868 acres of land, valued at \$4,602,121; improvements thereon, valued at \$2,302,214.20; city and town lots, valued at \$1,972,252; improvements thereon, valued at \$2,347,424.50; 720,940 cattle, valued at \$5,970,597.35; 288,727 sheep, valued at \$320,597.28; 47,912 horses, valued at \$1,188,168.45; 1,757 mules valued at \$58,973; 1,083 miles of railroad, valued at \$6,145,008.02.

Legislative Session.—The sixteenth Territorial Legislature began its regular session on Jan. 19, and adjourned on March 19. Both branches were controlled by Democrats, the Council standing 8 Democrats, 4 Republicans, and the House 17 Democrats, 7 Republicans. An act was passed providing for an election of delegates, on the second Tuesday of May, to a constitutional convention, which should meet at Phenix on the first Monday of September following and prepare a constitution for the proposed State of Arizona. The number of delegates was limited to twenty-two. The constitution so prepared must be submitted to a vote of the people.

A ballot-reform act provides that all ballots cast in elections for public office shall be printed and distributed at county expense, except that ballots in local elections shall be printed and distributed at the expense of the city, town, or village. Nominations of candidates for office may be made by the convention or caucus of any political party that polled at the last election for Territorial or county officers at least 1 per cent. of the entire vote cast in the Territory or county, or by nomination papers signed by voters residing within the district for which the nomination is made equal in number to at least 1 per cent. of the total vote cast in such district at the last preceding election. The ballots shall be printed on white paper, and shall contain the names of all candidates duly nominated. Each ballot shall be indorsed with the words "Official ballot," which shall be followed by the name of the district or precinct in which the ballots are to be used and the date of election. Each ballot shall also have on its back the *fac simile* of the signature of the chairman of the Board of Supervisors, with his official title. Each polling place shall be furnished with a sufficient number of voting booths, containing shelves on which the voters may mark their ballots screened

from observation. A guard rail shall be so constructed that only persons inside can approach within six feet of the booths or the ballot-boxes, but neither of these shall be hidden from the view of persons just outside the rail. Voting shall be done by marking a cross opposite the name of the candidate to be voted for, or by writing in a name and marking a cross opposite thereto. The voter, after marking his ballot in the booth, shall fold it so as to conceal his choice, and hand it to the election officer. The top of each ballot shall be partially separated from the remainder by a perforated line, and on this top or stub the election clerk shall write his name and the number of the voter in the order in which he voted, which number shall also be entered on the checklist.

The act does not apply to school elections, nor are its provisions enforceable until the first Monday in June, 1892.

An act limiting railroad fares prevents railroad companies from charging passengers over six cents for each mile or fraction thereof which they are carried, except that in no case shall the minimum fare be less than twenty-five cents. The rate chargeable for children under ten years shall not exceed three cents for each mile or fraction thereof. Baggage up to 150 pounds in weight shall be carried free for each passenger. An act to encourage railroad construction exempts from taxation for twenty years the property of all railroads hereafter built without subsidies, provided actual construction begins within one year after the passage of the act, and proceeds at the rate of fifty miles of track each year, and provided other requirements of the act are complied with.

Another act provides for the appointment of four railroad commissioners, two from each party, holding office for two years, who shall make an annual report to the Governor.

The Governor was given power to remove any Territorial officer appointed by him or his predecessor, whether with or without the consent of the Legislative Council, whenever in his judgment the best interest of the public service will be promoted. Provision was made for organizing, for the protection of the southern frontier, a company of armed horsemen, consisting of three officers and twenty men, to be known as the Arizona Rangers, a special part of whose duty it shall be to pursue and punish marauding Indians and other malefactors. An annual Territorial tax of six cents on each \$100 is to be levied to provide money for the equipment and support of these troops.

The new funding law for the Territory, passed by Congress in June, 1890, was re-enacted, with additional provisions necessary to carry it into full effect. The annual tax to be levied for completing the buildings for the Territorial University, at Tucson, was reduced from three fourths to one half of a mill annually. A department for the education of the deaf, dumb, and blind was added to the institution, to be organized whenever five persons who are admissible shall apply for instruction. Subject to the approval of Congress, an act was passed creating a Board of World's Fair Managers for Arizona, and appropriating \$30,000 for their use in securing a proper exhibit of the resources of the Ter-

ritory at Chicago in 1893, the sum to be borrowed at 5 per cent. for twenty years.

The offices of Commissioner of Immigration and of Territorial Geologist were abolished. The county of Coconino was created out of the northerly and easterly portions of Yavapai County.

Amendments were made to the jury law, so that in civil cases and in misdemeanor trials where twelve persons form the jury a verdict may be given by the concurrence of three fourths. Other acts of the session were as follow:

Changing the time of meeting of the Legislature to the second Monday of February in 1893, and every second year thereafter.

To provide for the establishment of a board of horticultural commissioners in any county on petition of residents thereof, and to empower such board to protect the county against the importation, propagation, and spreading of insects injurious to fruit and vines.

Limiting the time within which executions may issue to five years after rendition of judgment.

Authorizing incorporated cities, towns, and villages to dispose of vacant land.

Consolidating offices and reducing expenses in cities which cast a total vote of less than 600 at the November election in 1890.

Revising the mechanics' lien law.

Detaching certain lands from Yavapai County and annexing them to Gila County.

To prevent the sale of fire-arms, ammunition, and liquors to Indians.

To prohibit the licensing of gambling at any *festa*, or in any park, or on any race track or fair ground, or adjacent thereto, or in any public place frequented by women or minors.

Making the Friday following the first day of February in each year a holiday, to be known as Labor Day.

Authorizing school districts to issue bonds for the purpose of building school-houses and of liquidating outstanding indebtedness.

Amending the act of 1889 so that precinct and district offices in the Territory may be held by persons who can not read and write in the English language. Territorial and county offices can not be held by such.

Exempting from taxation for ten years all sugar-beet factories built within one year.

Repealing the close-herd law.

To prohibit the sale of intoxicants to minors and drunkards, and to prohibit the sale of cigarettes to children under sixteen years of age.

Providing for the appointment of live-stock inspectors, who shall inspect all stock about to be killed for sale or to be shipped or driven from the Territory, and to make sure that such stock is not stolen.

Providing a new law regulating the care of the indigent sick by the several counties.

Giving to persons who cut or cord wood, cut, saw, or skid logs, cut, saw, hew, or pile ties, a lien thereon for labor.

Education.—The following table shows the educational progress of the Territory for the past eight years:

YEAR.	Receipts.	Expenditures.	Schools.	Children.	Average attendance.	Teachers.
1883. . .	\$101,890 02	\$77,997 85	104	9,860	2,554	98
1884. . .	205,901 28	161,861 57	121	9,860	3,287	148
1885. . .	186,666 12	138,164 83	127	10,219	3,226	181
1886. . .	159,956 14	135,030 89	150	10,219	3,507	150
1887. . .	120,034 88	117,004 74	169	10,303	3,602	175
1888. . .	157,707 03	130,212 14	184	10,303	3,849	191
1889. . .	179,782 85	150,543 41	197	12,582	4,298	199
1890. . .	201,288 70	177,488 88	219	12,582	4,702	240

In 1890, 93 men and 147 women teachers were employed, their respective monthly salaries being \$82.45 and \$74.45.

There is a Normal School at Phenix, supported by the Territory, at which 42 students were enrolled on the first day of this year. Buildings for a Territorial University at Tucson are in process of erection.

Indians.—The Indian population of the Territory on June 30, 1890, was as follows: Colorado River Agency, Mojaves, 640; Pima and Maricopa Reservation, Pimas, 641; Pima Reservation on Gila River, Pimas, 3,823; Maricopa Reservation, Maricopas, 315; Papago Reservation and roaming Indians, Papagos, 5,163; San Carlos Agency (Cayotero, San Carlos, Tonto, and White Mountain Apache), Apaches, 2,121; Mojave Reservation, Mojaves, 551; Yuma Reservation, Mojaves, 240; White Mountain Apache Reservation, Apache, 1,920; living outside of the reservations, 1,326; total, 16,740.

Irrigation.—The total area in Arizona on which crops were raised by irrigation in the census year ending June 30, 1890, was 65,821 acres, or 102.8 square miles, less than one tenth of 1 per cent. of the entire area of the Territory. The aggregate number of farms was 1,448, and of these, 1,075, or 74 per cent., depended upon irrigation, the remaining 26 per cent. being stock ranches, or farms high in the mountains, where crops can be raised by what is known as "dry farming." The average size of irrigated farms, or rather of the irrigated portions of farms on which irrigation was practiced, was 61 acres.

Taking all the counties in the Territory, with their varying conditions, the average cost of water right was \$7.07 an acre.

The agricultural and irrigable land of Arizona is in the southwestern half of the Territory.

The acreage at present under irrigation may be regarded as approaching the maximum possible with the present supply of water and methods of using it.

Constitutional Convention.—Pursuant to the act of March 19, Gov. Irwin issued his proclamation calling a general election for the second Tuesday of May, at which delegates should be chosen to a constitutional convention appointed to meet at Phenix on the first Monday of September. At this election 17 Democrats and 5 Republicans were chosen. The convention met at the appointed time, and continued in session through Oct. 2, on which day a complete constitution was adopted and signed. This instrument contains no test oath or other provision to prevent Mormons in the Territory from voting, but declares bigamy and polygamy to be felonies, and provides for their punishment as such. Other important provisions are as follow:

No lottery shall ever be permitted.

The right of way over mountain passes and through cañons is granted to all upon such terms and regulations as may be prescribed by law.

The railroads are declared to be public highways.

The legislative power shall be vested in a Senate and House of Representatives, which shall be designated the Legislature of the State of Arizona.

Senators shall be elected for four years, and Representatives for two years.

Each county shall have at least one Senator and one Representative, but at no time shall the number

of members of the House of Representatives be less than twice, nor greater than three times, the number of members of the Senate. The Senate and House of Representatives first elected in pursuance of this constitution, shall consist of twelve and twenty-four members respectively.

No legislative session after the first shall exceed sixty days. The Legislature shall meet biennially on the second Tuesday of January next succeeding the election of its members.

No appropriation shall be made for charitable, industrial, educational, or benevolent purposes to any person, corporation, or community not under the absolute control of the State, nor to any denominational or sectarian institution or association.

The city of Phenix shall be the seat of government; but the people may by vote change the seat not oftener than once in ten years.

Eight hours shall constitute a day's labor on all State works.

All natural streams and lakes within the boundaries of this State capable of being used for the purposes of navigation or irrigation are declared to be the property of the State.

The common-law doctrine of riparian water rights shall never be applied in this State.

The right of individuals or corporations to construct reservoirs and impound and appropriate the surplus and flood waters for sale, rental, domestic stock, or any beneficial purpose, shall never be denied.

Provision was made for submitting this constitution to a vote of the people on the first day of December of this year.

The Lost Laws.—Under this term are included eleven acts of the fifteenth Territorial Legislature, which for more than a year were supposed to be lost, and the validity of which is not yet fully established. The fifteenth Legislature having continued in session more than sixty consecutive days after the day of its first session, a question at once arose whether its sessions after the sixty consecutive days were legal; or, in other words, whether the law of Congress limiting legislative sessions to sixty days meant sixty consecutive or sixty legislative days. Gov. Zúlic, to whom these eleven acts were transmitted for approval on March 21, 1889, which was the sixtieth consecutive day of the session, taking the view that the legal session must expire on that day, decided neither to approve nor return them, but to allow them to fail through the expiration of the session. He accordingly deposited them in a desk in the executive office, and a few days later turned over all official papers and the office to his successor, Gov. Wolfley. The acts remained unnoticed in the Governor's office until Nov. 9, 1890, when a demand was made upon the acting Governor for a copy of one of these laws alleged to be in his possession, and on examination of the records of the office the eleven were found. Meanwhile, the validity of the action of the Legislature after the expiration of the sixty consecutive days had been brought in question before the Territorial Supreme Court, and in March, 1890, a decision had been rendered declaring the session to be legal until sixty days of actual legislative session had expired. Under this decision the entire session of the fifteenth Legislature (which did not adjourn till April 10) was legal; and as the Governor had held these laws for a period of ten days, during which the Legislature was legally in session, they became laws without his approval. They were there-

fore printed by the Territorial Secretary and published for the first time in 1891, with the laws of the sixteenth Legislature. Steps have been taken to bring the question of their validity, and therefore the validity of the later action of the fifteenth Legislature, before the final tribunal, the United States Supreme Court. Until its decision is rendered they remain in force by virtue of the decision of the Territorial Court. The more important of these laws are the following:

Amending the law in relation to jurors and juries.
To establish a compulsory school law in and for the Territory.

To provide for the further erection and maintenance of the University of Arizona.

Prohibiting the carrying on of certain business within the limits of incorporated cities on Sunday.

Providing for attachments on real estate and personal property.

ARKANSAS, a Southern State, admitted to the Union June 15, 1836; area, 53,850 square miles. The population, according to each decennial census since admission, was 97,574 in 1840; 209,897 in 1850; 435,450 in 1860; 484,471 in 1870; 802,525 in 1880; and 1,128,179 in 1890. Capital, Little Rock.

Government.—The following were the State officers during the year: Governor, James P. Eagle, Democrat; Secretary of State, B. B. Chism; Auditor, W. S. Dunlop; Treasurer, Robert B. Morrow; Attorney-General, William E. Atkinson; Superintendent of Public Instruction, Josiah H. Shinn; State Land Commissioner, C. B. Myers; Chief Justice of the Supreme Court, Sterling R. Cockrill; Associate Justices, Burrill B. Battle, Simon P. Hughes, William E. Hemingway, and, W. W. Mansfield, who was elected on Jan. 26 to fill the vacancy caused by death of Justice M. H. Sandels, Nov. 12, 1890.

Education.—The following public-school statistics for the years ending June 30, 1889, and June 30, 1890, are reported by the State Superintendent of Public Instruction:

ITEMS.	1889.	1890.
Children of school age, white.....	297,675	297,904
Children of school age, colored.....	106,714	107,083
Number enrolled, white.....	153,770	154,259
Number enrolled, colored.....	56,382	51,003
Teachers employed, male.....	4,108	No report.
Teachers employed, female.....	1,537	No report.
Wages paid teachers.....	\$580,040 76	\$589,599 50
New school-houses erected.....	280	274
Total expenditures for school purposes.....	\$967,608 00	\$1,016,776 26

Charities.—On Nov. 30, 1888, there were in the State Lunatic Asylum 411 patients, of whom 161 were white males, 168 white females, 40 colored males, and 42 colored females. During the year succeeding, 95 patients were admitted and 96 discharged, while during the year beginning Nov. 30, 1889, 88 were admitted and 88 discharged, leaving 410 remaining on Nov. 30, 1890, of whom 160 were white males, 167 white females, 44 colored males, and 39 colored females. Additional accommodations at this institution were provided for by the General Assembly this year. At the State School for the Blind the total enrollment in 1888-'89 was 144 pupils, and in 1889-'90, 165. At the Deaf Mute Institute 143 pupils were enrolled for the two years ending June 30, 1890.

Population by Races.—The following table shows the white and colored population of the several counties in 1880 and in 1890, according to the Federal census:

COUNTIES.	WHITE.		COLORED.	
	1890.	1880.	1890.	1880.
The State.....	816,517	591,531	811,227	210,000
Arkansas.....	7,861	4,971	8,571	3,067
Ashley.....	6,824	5,026	6,971	5,140
Baxter.....	8,511	5,959	16	45
Benton.....	27,001	23,167	108	128
Boone.....	15,724	12,058	92	88
Bradley.....	5,040	4,075	2,926	2,210
Calhoun.....	4,545	3,583	2,722	2,088
Carroll.....	17,200	13,272	82	60
Chicot.....	1,808	1,563	10,112	8,495
Clark.....	14,275	10,567	6,709	5,203
Clay.....	12,162	7,191	37	22
Cleburne.....	7,832	.....	49	.....
Cleveland.....	8,066	6,141	8,296	2,329
Columbia.....	12,507	8,587	7,885	5,503
Conway.....	11,742	9,546	7,717	3,206
Craighead.....	11,485	6,776	540	261
Crawford.....	19,352	18,332	2,804	1,392
Crittenden.....	2,015	1,899	11,925	7,516
Cross.....	4,755	3,261	2,937	1,759
Dallas.....	6,003	4,299	8,288	2,200
Dosha.....	2,049	2,452	8,267	6,514
Drew.....	7,506	6,472	9,841	5,759
Faulkner.....	14,970	11,368	8,872	1,418
Franklin.....	19,239	14,475	694	498
Fulton.....	10,899	6,684	84	56
Garland.....	12,518	7,457	2,802	1,562
Grant.....	6,789	5,629	1,046	556
Greene.....	12,748	7,405	160	75
Hempstead.....	11,717	9,598	11,669	9,421
Hot Spring.....	10,868	7,080	1,235	745
Howard.....	10,695	7,409	8,089	2,508
Independence.....	20,857	16,703	1,588	1,382
Izard.....	12,772	10,635	206	222
Jackson.....	10,891	8,113	4,847	2,768
Jefferson.....	10,788	5,381	80,068	17,011
Johnson.....	16,138	11,078	625	491
Lafayette.....	8,095	2,116	4,604	3,614
Lawrence.....	12,122	5,815	862	467
Lee.....	4,560	4,138	14,318	9,150
Lincoln.....	8,768	4,212	6,492	5,040
Little River.....	4,854	3,064	4,049	3,835
Logan.....	19,682	18,901	1,134	984
Lonoke.....	11,170	8,148	8,092	4,008
Madison.....	17,345	11,331	57	124
Marion.....	10,859	7,864	31	43
Miller.....	8,095	5,324	6,617	4,595
Mississippi.....	5,659	4,671	5,918	2,654
Monroe.....	6,084	4,365	9,243	5,209
Montgomery.....	7,615	5,471	808	253
Nevada.....	10,442	9,236	4,889	3,722
Newton.....	9,944	6,115	6	5
Ouachita.....	7,971	5,504	9,050	6,213
Perry.....	4,506	3,072	942	800
Phillips.....	5,604	5,444	19,781	15,809
Pike.....	8,052	5,951	485	392
Polk.....	8,651	1,902	621	290
Polk.....	9,237	5,792	46	61
Pope.....	17,515	13,413	1,643	809
Prairie.....	6,977	5,691	4,866	2,784
Pulaski.....	25,219	17,667	22,046	14,921
Randolph.....	18,888	11,097	602	627
St. Francis.....	5,473	4,921	8,669	3,407
Saline.....	9,942	7,586	1,369	1,266
Scott.....	12,593	9,085	84	83
Searcy.....	9,698	7,262	26	16
Sebastian.....	29,307	17,970	8,741	1,541
Sevier.....	8,600	5,088	1,468	1,066
Sharp.....	10,242	8,871	176	176
Stone.....	6,980	4,984	118	99
Union.....	5,572	6,985	6,405	6,484
Van Buren.....	8,403	9,447	164	118
Washington.....	31,005	22,894	1,017	844
White.....	20,262	15,761	2,684	2,032
Woodruff.....	6,428	4,168	7,570	4,483
Yell.....	16,600	12,738	1,415	1,118

* Formerly Dorsey County.

The State also contained, in 1890, 131 Chinese and 304 Indians.

Finances.—The following figures are taken from the latest report of the State Auditor: General revenue fund, balance on Oct. 1, 1888, \$778,937.91; total receipts for the two years succeeding, \$909,747.93; total expenditures, \$1,261,114.54; balance on Oct. 1, 1890, \$427,571.30. Common-school fund, balance on Oct. 1, 1888, \$439,766.24; total receipts for the two years, \$625,858.32; total expenditures, \$802,441.02; balance on Oct. 1, 1890, \$263,183.54. Permanent school fund, balance on Oct. 1, 1888, \$266,368.38; total receipts for the two years, \$14,127.42; total payments, \$6,293.98; balance on Oct. 1, 1890, \$274,201.82. Sinking fund, balance on Oct. 1, 1888, \$2,924,501.72; total receipts for the two years, \$113,514.12; total payments, \$102,733.09; balance on Oct. 1, 1890, \$2,935,282.75. Special sinking fund, balance on Oct. 1, 1888, \$136,830.23; total receipts for the two years, \$312,172.21; total payments, \$3,227.31; balance on Oct. 1, 1890, \$445,775.13. The balance in all funds in the treasury on Oct. 1, 1890, aggregated \$4,799,733.46. For 1890 the State tax rate was two mills for the general fund, two mills for schools, and one mill for the sinking fund, a total of five mills; for 1891 the rate was two and one fourth mills for the general revenue fund, two mills for schools, one half mill for the sinking fund, and one fourth mill for pensions.

The bonded State debt on Oct. 1, 1890, consisted of principal, \$2,092,100; overdue interest, \$2,884,897.50; total, \$4,976,997.50. This is an increase of \$114,982.50 over the total for Oct. 1, 1888, notwithstanding the fact that the State has meanwhile redeemed \$395,415 of its debt. The discrepancy is explained by the fact that the State authorities have recently discovered the existence of \$3,000 5-per-cent. bank bonds and \$252,000 6-per-cent. funding bonds of the series of 1870, both of which were supposed to have been long since redeemed and canceled, as stated in memoranda in the Treasurer's office. It appears, however, that these securities have always been held by the United States as valid demands against the State, and are so reported by the Secretary of the Treasury. Large arrears of interest are due thereon, making the total discovered liability of the State about \$500,000. In addition to the bonded debt there is a floating indebtedness of \$27,959.13 in the form of certificates of indebtedness issued under section 3167 of Mansfield's "Digest," for redemption of which no provision has been made.

Legislative Session.—The twenty-ninth General Assembly met on Jan. 12, and adjourned on April 4. Early in the session United States Senator James K. Jones was re-elected for the full senatorial term by the following vote: Senate, Jones 26, D. E. Barker 2; House, Jones 80, Jacob Triebler 12, Barker 2, J. F. Sellers 1. A secret-ballot law was enacted at this session. It provides that all ballots used in any presidential, congressional, State, district, county, township, or municipal election, either general or special, shall be furnished at the county expense by a board of county election commissioners, except that ballots used exclusively in municipal elections shall be furnished by this board at municipal expense. The ballots shall all be alike, shall be printed in plain type, and shall contain the names of all candidates duly nominated. A

convention or caucus or any organized political party may nominate candidates, or they may be nominated by certificates signed by not fewer than ten nor more than fifty electors, if the nomination is made for any township or ward of a city or town, and by not less than fifty nor over one thousand electors in other cases. At each polling place there shall be provided one booth or compartment for each one hundred electors, or fraction of one hundred, voting thereat in the last preceding election. Each booth shall be fitted with a table, shelf, or desk for the convenience of electors, and its walls shall be of wood, so constructed as to enable each elector to enter and prepare his ballot free from the interference of any person. The booths shall be placed at least five feet apart. No person shall be permitted under any pretext to come nearer than fifty feet of any door or window of any polling room, except as provided in the act. Each elector upon entering the polling room shall be given one ballot, on the back of which at least one of the election judges shall write his name or initials. On receiving his ballot the elector shall forthwith, without leaving the polling room, retire alone to one of the booths and prepare his ballot by scratching off, erasing, or crossing out the names of all candidates except those for whom he may wish to vote, writing in any name that is not printed where he would have it, or that is not printed on the ballot at all. In the case of a constitutional amendment or other question, as, for instance, "For License" or "Against license," the elector shall cross out parts of his ballot in such manner that the remaining parts shall express his vote.

After preparing his ballot the elector shall fold it so as to conceal the face thereof, and so as to show the name or initials of the judge on the back, and shall hand it to the receiving judge. The latter shall call out the name of the elector and the number of the ballot, shall write the number on the ballot, and shall deposit it in the box in the sight of the elector, who shall immediately leave the room and go beyond the fifty-foot limit. No ballot shall be received from any elector, or deposited in the ballot-box, which does not have the name or initials of at least one of the judges indorsed on it. No officer of election shall do any electioneering on election day. No person shall do any electioneering in any polling room, or within one hundred feet of any polling room, on election day.

No elector shall be allowed to occupy a booth or compartment for the purpose of voting for a longer time than five minutes.

Another act requires all railroad companies to provide equal but separate and sufficient accommodations for the white and African races, by furnishing two or more passenger coaches for each train, and to provide separate waiting rooms for each race of equal and sufficient accommodations at all passenger stations. On all lines less than 25 miles long, separation of the races by dividing each car by a partition may be allowed. Persons in whom there is a visible and distinct admixture of African blood shall, for the purposes of this act, be deemed to belong to the African race; all others, to the white race.

An act to pension disabled Confederate soldiers and sailors, and the widows of their deceased com-

rades who were killed in the service, authorizes the annual payment of \$100 to totally disabled veterans, and various sums down to \$25 to others, according to the extent of their disability, widows receiving the last-mentioned sum. To raise money for these claims, a tax of one fourth of a mill on the dollar is to be levied annually for the next two years, from the proceeds of which \$10,000 shall be annually deducted and applied to the erection and maintenance of a home for ex-Confederate soldiers. If after this deduction the fund derived from this tax shall be insufficient to meet the claims presented, a pro-rata distribution of the sum available shall be made among the claimants.

An act in the interest of public education authorizes the State Superintendent of Public Instruction to establish six district normal schools for white teachers, one in each congressional district, and two normal schools for colored teachers, to appoint a principal for each school, and to arrange a suitable course of study. Each school shall hold annually a session of three consecutive months of twenty days each, to which only teachers and intending teachers shall be admitted. The sum of \$2,000 was appropriated for each of the next two years, to be used only in paying the salaries of instructors.

The State was redistricted for members of Congress as follows:

First District—Sharp, Randolph, Clay, Lawrence, Green, Craighead, Mississippi, Poinsett, Jackson, Woodruff, Cross, Crittenden, St. Francis, Lee, and Phillips—15.

Second District—Drew, Bradley, Cleveland, Jefferson, Grant, Dallas, Hot Spring, Lincoln, Saline, Garland, Montgomery, Polk, Scott, and Sebastian—14.

Third District—Desha, Chicot, Ashley, Calhoun, Union, Ouachita, Columbia, Nevada, Clark, Pike, Hempstead, Lafayette, Miller, Little River, Sevier, and Howard—16.

Fourth District—Pulaski, Perry, Conway, Pope, Yell, Logan, Johnson, Franklin—8.

Fifth District—Crawford, Washington, Benton, Carroll, Madison, Newton, Boone, Searcy, Van Buren, Faulkner—10.

Sixth (new) District—Marion, Baxter, Fulton, Izard, Stone, Independence, Cleburne, White, Lonoke, Prairie, Monroe, Arkansas—12.

Provision was made for submitting to the people at the next general election an amendment to the State Constitution, requiring the following qualifications for voting: First, the payment of a poll tax within the year preceding the election; Second, residence in the State twelve months, in the county six months, and in the precinct or ward one month next preceding any election.

The Penitentiary commissioners were requested to procure all available information respecting the management of State prisons in the several States, and to report to the next General Assembly with suggestions as to the future management of the State Penitentiary.

A resolution was adopted favoring the election of United States Senators by popular vote. The annual State tax upon liquor dealers was increased from \$200 to \$300.

An increase was made in the State tax for general purposes from 2 to 2½ mills, the tax for schools remaining at 2 mills, while the tax to be levied for the sinking fund was reduced from 1 mill to ½ mill.

Provision was made for appropriating from the sinking fund during the next two years \$300,000 for the purchase of State bonds.

The sum of \$85,000 was appropriated for additional buildings at the State Insane Asylum sufficient to accommodate 300 patients.

Action upon a bill appropriating \$100,000 to secure representation of the State at the World's Columbian Exposition was postponed till final action upon the Lodge bill by Congress, and after that event the sum to be appropriated was reduced to \$25,000, and the bill was finally defeated.

Other acts of the session were as follow:

To prohibit gaming with minors.

Declaring that the lien of a mortgage or other incumbrance shall not extend to the increase or offspring of an animal subject to such lien.

Requiring insurance companies before doing business in the State to execute a bond with sureties in a sufficient sum, on which persons having claims against such companies may sue for satisfaction.

Changing the penalty for robbery to imprisonment for not less than three nor more than twenty-one years.

Legalizing all marriages heretofore solemnized by any regularly ordained minister or priest.

Establishing the Arkansas State Board of Pharmacy.

To make express companies and all other common carriers the agents of the seller when they carry intoxicating liquors in C. O. D. packages, and to make the place of delivery the place of sale.

Providing a new law with reference to quieting titles.

To punish persons who engage in prize fights either with or without gloves, or who act as second or referee, or otherwise participate in such fights.

Fixing the number of members of the State House of Representatives, and apportioning them.

Defining the line between the counties of Yell and Perry.

Accepting the act of Congress of 1890, appropriating money for the support of colleges of agriculture and mechanic arts in the several States, and apportioning eight elevenths of the money so appropriated to the Arkansas Industrial University at Fayetteville (for whites), and three elevenths to the Branch Normal College at Pine Bluff (for colored).

To incorporate the Ex-Confederate Association of Arkansas.

To change the boundary lines between Yell and Logan Counties.

To authorize the redemption of lands sold for taxes after they have been deeded to the State.

To establish chancery courts in the counties of Drew, Arkansas, Ashley, Desha, and Chicot.

Appropriating \$5,000 for additional buildings at the Arkansas School for the Blind.

Appropriating \$5,000 for a mechanical and agricultural department at the Branch Normal College of the Arkansas Industrial University.

Requiring all railroad and express companies to provide all trains with stage planks not less than eight feet in length, to be used in unloading baggage from said trains, and prohibiting the employes of such companies from tumbling baggage from the car doors or otherwise roughly handling the same so as to cause breakage or injury.

Politically the members of each House were divided as follow: Senate, Democrats 28, Union Labor and Republicans 3; House, Democrats 77, Union Labor and Republicans 12.

Penitentiary.—For the year ending Jan. 1, 1890, the population of the State Penitentiary shows the following changes: Convicts on Jan. 1, 1889, 577; received or recaptured during the

year, 393; discharged, died, or escaped, 295; remaining on Dec. 31, 1889, 675. The report for the year ending Jan. 1, 1891, is as follows: Convicts on Jan. 1, 1890, 675; received or recaptured during the year, 349; discharged, died, or escaped, 334; remaining on Dec. 31, 1890, 690. Of the number remaining on the last date all but 90 were employed outside of the Penitentiary walls, 310 being engaged at farming, 140 at farming and cutting wood, 75 at cutting wood, and 75 in railroad building. They were stationed at nine different localities. The present convict lease expires on May 7, 1893, but although there is great dissatisfaction with the lease system, the General Assembly did nothing this year toward its abolition, except to appoint a committee to investigate the subject of prison management. Any change from the lease system will involve the construction of a new Penitentiary building.

The Woodruff Defalcation.—Late in 1890 rumors were current that the retiring State Treasurer, William E. Woodruff, had been using the public funds for private purposes, and would not be able in January to turn over to his successor the full amount with which he was chargeable. Gov. Eagle, in his message to the General Assembly on Jan. 13, recommended that a joint investigating committee of both Houses be appointed. A resolution providing for such a committee, consisting of two members from the Senate and three from the House, was promptly passed, and the investigation was begun on Jan. 24. Treasurer-elect Morrow had taken control of the office one week before the latter date. The joint committee made its first report to the General Assembly on Feb. 12, in which it said that Woodruff could not produce nor account for \$63,740.57 due from him to the general revenue fund of the State, and recommended that legal proceedings be taken against him. Six days later his bondsmen came to his assistance and paid over the full amount of the shortage. The General Assembly, however, acting upon the recommendation of the committee, passed a resolution directing the Governor to suggest to the proper officers the necessity of beginning criminal proceedings against the delinquent official, and on Feb. 27 he was arrested. Bail was furnished for his appearance at the next term of the court. Meanwhile, in addition to the joint investigating committee, a joint standing committee on Treasurer's and Auditor's accounts, which is regularly appointed at each session, had been examining the condition of the Treasurer's office with the aid of experts, and about March 15 it made a report to the General Assembly, in which it claimed to find a further shortage of \$69,288. On April 4, just before the close of the session, the joint investigating committee made its final report, in which it placed the additional shortage of Woodruff at only \$25,724.06. As neither committee had made an exhaustive investigation, an act was passed on the same day authorizing the State Debt Board to take up the investigation, and complete the work in a thorough manner. This board consisted of the Governor, Auditor, and Secretary of State, but the last named, being a bondsman of the ex-Treasurer, declined to serve. The other two members entered upon their du-

ties on April 23, and, going back to a period prior to the ex-Treasurer's term, proceeded to make an exhaustive examination of all the transactions of the office. In this investigation the ex-Treasurer was represented by J. L. Bay, an expert, who attended nearly all the deliberations of the board, and who from time to time, in order to make up any deficiencies, tendered to the board securities which the ex-Treasurer had still retained in his hands. On Aug. 17, while the board were still engaged in its work, State Treasurer Morrow caused the arrest of Bay on the charge that he had abstracted certain scrip and other securities to the amount of \$100,000 from the custody of the Treasurer, to be used to offset the indebtedness of Woodruff to the State. The foundation of this charge proved to be that Bay had taken these securities from a box belonging to the State and placed them in another box in the same vault. A trial of the case resulted in the discharge of the prisoner on Sept. 17. On Sept. 30 the State Debt Board published its final report, in which the shortage in securities was found to be as follows: State scrip, \$20,526.57; bond scrip, \$5,011.34; 6-per-cent. funding bonds, \$24.19; 6-per-cent. funding bond coupons, \$11,150.86; county scrip, \$314.02; State scrip (contingent), \$101,780.01. Total shortage, \$138,789.95.

The ex-Treasurer, through his agent, Mr. Bay, had tendered to the board scrip and other securities of a face value largely in excess of this shortage, but they were not accepted as a proper tender. The courts must pass upon the legality of these tendered securities before the exact amount of the shortage can be known.

Late in June an indictment against the ex-Treasurer was found by the grand jury of Pulaski County, but his trial was postponed to await the findings of the investigating board. It began on Oct. 19, and after a long and somewhat dramatic course ended late in the month in a disagreement of the jury.

To protect the State against further defalcations, the General Assembly this year passed an act requiring the Governor to appoint secretly, at least once each year, one or two expert accountants, whose duty it shall be to examine and report the condition of the Treasurer's office. They shall be sworn to keep their appointment secret until they appear in the office to begin the examination.

World's Fair Convention.—The General Assembly of this year having adjourned without providing for representation of the State at the World's Columbian Exposition in 1893, Gov. Eagle issued a proclamation on May 26, calling a convention of delegates from the several counties to meet at Little Rock on Aug. 5 and devise means of raising money to secure a creditable exhibit of the State at the exposition. At this convention forty counties were represented by over 200 delegates. A resolution requesting the Governor to call an extra session of the General Assembly, for the purpose of passing a World's Fair appropriation bill, was voted down. It was then decided to incorporate a company, called "The Arkansas World's Fair Association," with a capital stock of \$100,000, divided into 50,000 shares of \$2 each, to which popular subscriptions should be invited. The

officers of this company were authorized to provide for the erection of suitable buildings at the exposition and to superintend the exhibit of the State therein, being assisted by a board of lady managers. The company is empowered to begin operations whenever \$10,000 of its stock has been subscribed.

Election.—To fill the vacancy on the Supreme Court bench caused by the death of Justice M. H. Sandels in November, 1890, Gov. Eagle issued a call late in December for a special election to be held on Jan. 26 following. The Democrats, in State convention at Little Rock, on Jan. 8, nominated W. W. Mansfield after taking over thirty ballots, his competitors being M. T. Sanders, R. H. Powell, B. T. Du Val, and H. G. Bunn. No other party ventured to nominate an opposition candidate. The election, therefore, evoked no popular interest, only 25,414 votes being cast, of which Mansfield received 25,057.

ASSOCIATIONS FOR THE ADVANCEMENT OF SCIENCE. American.

—The fortieth meeting of the American Association was held in Washington, D. C., beginning on Aug. 19 and ending on Aug. 25, 1891. The officers of the meeting were: President, Albert B. Prescott, Ann Arbor, Mich. Vice-presidents of sections: A, Edward W. Hyde, of Cincinnati, Ohio; B, Francis E. Nipher, of St. Louis, Mo.; C, Robert C. Kedzie, of Agricultural College, Mich.; D, Thomas Gray, of Terre Haute, Ind.; E, John J. Stevenson, of New York; F, John M. Coulter, of Bloomington, Ind.; H, Joseph Jastrow, of Madison, Wis.; I, Edmund J. James, of Philadelphia, Pa. Permanent Secretary, Frederick W. Putnam, of Cambridge, Mass. General Secretary, Harvey W. Wiley, of Washington, D. C. Secretary of the Council, Amos W. Butler, of Brookville, Ind. Secretaries of the sections: A, Frank H. Bigelow, of Washington, D. C.; B, Alexander MacFarlane, of Austin, Texas; C, Thomas H. Norton, of Cincinnati, Ohio; D, William Kent, of New York city; E, W. J. McGee, of Washington, D. C.; F, Albert J. Cook, of Agricultural College, Mich.; H, William H. Holmes, of Washington, D. C.; I, Bernhard E. Fernow, of Washington, D. C. Treasurer, William Lilly, of Mauch Chunk, Pa.

Opening Proceedings.—On Nov. 13, 1890, 153 members had been elected, and on April 23, 1891, 19 additional names were passed on. Likewise, at a meeting of the council held on Aug. 17, 99 members were added to the list, and again, at a council meeting held on Aug. 18, 9 more names were added, bringing the total membership up to 2,215. These preliminary meetings of the council were held in order to pass on the various papers to be presented before the sections, and in other ways to arrange the programme for the week. The opening exercises were held in the law-lecture room of Columbian University, and the gathered scientists were called to order on the morning of Aug. 19 by President Goodale, who then introduced President Prescott. The new presiding officer briefly acknowledged the high honor conferred on him, and then presented Edwin Willits, the assistant Secretary of Agriculture, who made welcome the association to Washington with an eloquent address. The association was then more specially

welcomed to the Columbian University by its president, James C. Welling. Both of these addresses were appropriately responded to by President Prescott. The permanent secretary then made



ALBERT B. PRESCOTT.

several formal announcements, and presented his financial statement for the year ending Aug. 1, showing the total receipts to have been \$7,443.08. There was a balance left, after deducting expenditures of the year, of \$1,040.92. The balance of the Research fund is \$5,254.27. Of this the association has the right to appropriate the interest to any current work of research. The general secretary announced that the council recommended that the sections meet Wednesday, Thursday, Friday, and Saturday, from 10 to 12 a. m. and from 2 to 5 p. m. Also, that the council recommended that the amendment to the constitution proposed last year—that no one who is secretary of a section be eligible to the office of vice-president until one year after his term of office as secretary—do not pass. The report was adopted. The council reported adversely on three other proposed amendments, respectively: that no person should be eligible to election to fellowship at the same meeting at which he is elected a member; that no fellow should be eligible to election to council until one year after he has qualified; and that the annual dues be \$5, instead of \$3. This action was approved of by the association. The council reported favorably on an amendment providing for "foreign associates," only it struck out the words "foreign associates" and substituted the term "corresponding members." The amendment provides for fifty such members, to be designated by the council from scientists not residing in America. After some discussion the proposed amendment as reported by the council was adopted.

An invitation from the Southern Interstate Immigration Bureau to attend the Southern Exposition at Raleigh, N. C., in October, was read.

Address of the Retiring President.—Dr. George L. Goodale's subject was "The Possibilities of Economic Botany," and he illustrated it by examples of the useful plants which mankind may hope to employ in the near future. Speculation is rife as to the coming man; there-

fore we have a right to make conjectures as to the plants he will probably use. The cereal grains will probably remain with comparatively little change, except in the direction of better varieties for milling. To show how well understood are the methods of improving plants, Dr. Goodale said that if all the present cereals were swept out of existence our experiment stations could probably replace them by other grasses within half a century. The methods are selection and hybridization. New vegetables may be reasonably expected from Japan, that country which has already sent us many choice plants in all departments, and it is likely that some of the present vegetables which are much neglected will come into greater favor and be improved. The fruits of the future will tend more and more toward becoming seedless, just as pineapples, bananas, and some oranges are now. There is no good reason why we should not have seedless raspberries, strawberries, and blackberries, and also raise, by cutting, plums, cherries, and peaches free from stones. The useful cabinet woods and timbers, the fibers, tanning materials, gums, rubbers, and other economic products from plants were taken up in order, and the possible improvements were described. There is little doubt that synthetical chemistry will add to its triumphs many more products to those formed by plants, and this will diminish the zeal with which some of our economic plants will be cultivated. The coming fashions in florists' plants are to be in the direction of flowering branches and dwarfed plants, such as dwarfed cherries and magnolias. The old favorites will largely keep their places. Forage plants for our deserts were discussed, and reference was made to the danger of introducing pests from foreign countries. An example of this danger is afforded by sweetbrier in Australasia, which runs wild over much arable land in certain districts. The study of improvement in plants is now carried on in a judicious manner by the Agricultural Department and by the experiment stations. But there is also needed a series of gardens in different parts of our country where experiments can be carried on in a thorough manner in hybridizing and selection. The Arnold arboretum and the Shaw garden were spoken of as good illustrations of what is needed, but the desirability of establishing an institution on a scale commensurate with the wants of our country was pointed out, and the hope was expressed that such an establishment should not be governmental or academic.

Proceedings of the Sections.—There are eight sections, each of which is presided over by a vice-president. Immediately after the adjournment of the first general session the members of the different sections meet in the rooms assigned to them and organize. Their next duty is the election of one fellow to the council, followed by the election of three fellows, who, with the vice-president and the secretary, form the sectional committee; the election of a member or fellow to the nominating committee; the election of three members or fellows to act with the vice-president and secretary as the sub-committee to recommend to the nominating committee the vice-president and secretary of the next meeting. These duties having been performed, the

secretaries of the sections report to the general secretary, who then prepares with the sectional committees the programmes for the ensuing sessions. After the recess on the first day the reading of the vice-presidential addresses takes place.

Sections.—*A. Mathematics and Astronomy.*—This section was presided over by Prof. Edward W. Hyde, of the University of Cincinnati, Ohio, who chose "The Evolution of Algebra" as the subject of his address. He gave a concise presentation of the history of algebra, extending from before the Christian era to the present time, and foretelling the future of the science. The earliest traces of algebraic knowledge, he said, were in ancient Egyptian manuscripts. Records of an almost prehistoric Egyptian mathematician named Ahmes, who lived and figured and died some hundred years before Christ, were referred to as showing that this pioneer in algebra had left behind him evidence that he had performed geometrical and some algebraical problems. Scarcely anything is known of the mathematics of ancient Egypt. Among the early Greeks, before the Christian era, geometry was cultivated extensively, but very little in the way of algebra was done till about 400 A. D. Then the foundation of the algebraic science was laid by Diophantus of Alexandria. Algebra has been classified by Nesselmann as rhetorical, synopiated, and symbolical. In the first stage algebraic work was purely by reasoning in words. In the synopiated method abbreviations were introduced and used instead of words. The symbolical stage is the present one. Arbitrary characters show what was once represented by spoken words and later by abbreviations of written words. Most of the work of the early algebraists was in the rhetorical stage. Diophantus used particular characters for unknown quantities, a character for "minus," and represented addition by juxtaposition. The square and cube of the unknown quantity were represented by contractions of the words "power" and "cube." Diophantus was greatly hampered by having but one character to represent the unknown quantity, though he accomplished remarkable results by his ingenuity and the skill with which he made the necessary combinations. Algebra was early cultivated in India. The first Indian methods of which moderns know were those of Arya Bhatta, who lived six centuries before Christ. He wrote works on arithmetic, algebra, geometry, trigonometry, and astronomy, stating his rules and propositions in verse. His work was purely of the rhetorical style. The only other ancient Indian mathematician of whom moderns know was Brahma Gupta, whose period was about A. D. 700. He also figured in verse, the name of his work, Englished, being "The System of Brahma in Astronomy." These Indian writings are interesting as being the source whence the Arabs derived their first knowledge of algebra. They absorbed from the Greeks, through the translations of Euclid and others, a knowledge of geometry, mechanics, and astronomy, but there seems to have been no translation of the works of Diophantus till after they themselves had already made considerable progress. It was from the Arabs that western Europe derived its first knowledge of mathematics. Concerning the future of algebra, he said: "We have now traced

the development of our subject from its earliest beginning, then along the ancient period when it was in the rhetorical stage, approaching at intervals here and there the synoptical, then on to the revival of learning after the dark ages. We have seen the comparatively rapid progress through the synoptical stage to the purely symbolical stage, where it was at last in a shape suitable for the astounding progress of the last two hundred years. Finally, in the present century, we have noted the approach of multiple algebra from different and independent sources, whose value is the glorious future."

The following-named papers were read before the section:

"On a Digest of the Literature of the Mathematical Sciences," by Alexander S. Christie; "Latitude of the Sayre Observatory," by C. L. Doolittle; "The Secular Variation of Terrestrial Latitudes," by George C. Comstock; "Groups of Stars, Binary and Multiple," by George W. Holley; "Description of the Great Spectroscope and Spectrograph constructed for the Halsted Observatory, Princeton, N. J.," and "Note on Some Recent Photographs of the Reversal of the Hydrogen Lines of Solar Prominences," by John A. Brush; "On a Modified Form of Zenith Telescope for determining Standard Declinations," and "On the Application of the 'Photochronograph' to the Automatic Record of Stellar Occultations, particularly Dark-limb Emissions," by David P. Todd; "The Zodiacal Light as related to Terrestrial Temperature Variation," by Oray T. Sherman; "On the Long-period Terms in the Motion of Hyperion," by Ormond Stone; "Standardizing Photographic Film without the Use of a Standard Light" and "Exhibition and Description of a New Scientific Instrument, the Aurora-Inclinometer," by Frank H. Bigelow; "The Tabulation of Light-curves: Description, Explanation, and Illustration of a New Method," and "Stellar Fluctuations: Distinguished from Variable Stars; Investigation of its Frequency," by Henry M. Parkhurst; "On Certain Space and Surface Integrals," by Thomas S. Fiske; "The Fundamental Law of Electromagnetism," by James Loudon; "Method of Controlling a Driving Clock," by Francis P. Leavenworth; "On the Bitangential of the Quintic," by William E. Heal; "Parallax of α Leonis," by Jefferson E. Kershner; also, in joint session of Sections A and B, "Principles of the Algebra of Physics," by Alexander Macfarlane.

B. Physics.—The presiding officer of this section was Prof. Francis E. Nipher, of Washington University, St. Louis, Mo. He discussed the "Functions and Nature of the Ether of Space."

In former days the reasons given for the existence of ether do not seem conclusive now. For years it was taught that light was an elastic pulsation in an incompressible jelly-like medium. Some of the mathematical deductions of Green he could only reconcile with the observed phenomena by making the ether incompressible. In 1865 Maxwell proposed his theory that light was an electric displacement in a plane at right angles to the line of propagation. Maxwell's theory met with great favor, and afforded simple and natural explanations for phenomena which had previously been clouded by rather strained assumptions. In 1888 Sir William Thomson brought a powerful re-enforcement to the elastic theory. He showed that the compression wave might be got rid of in the theory by making the velocity of the compression wave zero instead of infinity. Thomson found that this assumption did not involve an unstable condition of the

medium, and that therefore it was admissible. It was also shown at once by Thomson, Willard Gibbs, and Fitzgerald that this new suggestion placed the elastic and electric theories on the same logical basis if the ether was considered incompressible in the electric theory and to have a rigidity zero for a compression wave in the elastic theory. The showing of light in space occupied by matter shows that the ether within must be less elastic than that in free space. It is certainly difficult to understand what there can be in the molecules of matter which can increase the density of an incompressible medium. The beautiful experiment of Michelson and Morley shows apparently that the ether at the surface of the earth moves with it. It is dragged along as if it were a liquid. The field of a steel magnet is, however, a rotational phenomenon. It is a spin which is maintained permanently without the expenditure of energy. It seems, therefore, that the resistance to shear which shows itself in the adhesion of the ether to the moving earth must be a rigidity due in some way to motion. Other experiments of Michelson and Morley on the motion of light in moving columns of water have been taken as proof that the ether in water is condensed to nine sixteenths of its volume in air. The ether in water certainly behaves as if it were more dense, but it is another matter to say that it is so. It is still a mathematical fiction which covers a gap in our knowledge of the ether. He thought that the experiment should be repeated with water at rest within a tube which should be mounted on elastic supports in a moving railway car. The water tube and the observer's seat should be rigidly connected, and swung on dampened spring supports from the top and sides of the car. The question to be settled is whether the ether or any part of it is at rest in space, and does it sweep through the interior of bodies which move through it, as wind sweeps through the leaves and branches of a tree. This form of the experiment is the one contemplated by Eisenlohr's analysis leading to Fresnel's formula, and it is capable of great variations in the conditions of experiment. Whatever its results may be, it promises to add greatly to our knowledge of the physics of the ether.

The following-named papers were then read before the section:

"On the Logarithmic Mean Distance between Pairs of Points in any Two Lines," by William Hoover; "A New Method for measuring the Expansion of Solids," by Edward W. Morley; "Measurement of the Expansion of Jessup's Steel by a New Method," by Edward W. Morley and William A. Rogers; "Statement of the General Law determining the Fusing and Boiling Point of any Compound under any Pressure as Simple Function of the Chemical Constitution of the Same," by Gustavus Hinrichs; "The Calculation of the Boiling Point of a Liquid under any Pressure"; "Determination of the Discontinuity of the Fusing Points of Paraffins by Means of Analytical Mechanics"; "A Scheme for a Science of Color," by William Orr; "Note on Magnetic Measurements at Ohio State University" and "Notes on Rotating Contact Methods of Measurement of Variable Electric Magnitudes," by Benjamin F. Thomas; "The Periodicity of the Aurora," by Major A. Veeder; "Some Forms of Carbon and Alkaline Storage Batteries" and "The Tangent Galvanometer as a Voltmeter," by W. M. Stine; "Do Tornadoes whirl?" and "Artificial Rain," by Henry A. Hazen; "Observations with a

New Photometer," by Nelson H. Genung and Frederick J. Rogers; "Magnesium as a Source of Light," by Frederick J. Rogers; "Note on the Measurement of Resistances by Alternating Currents," "The Nature of Counter-electromotive Force," and "What should be our Fundamental Units?" by Brown Ayres; "Behavior of Silver Emulsions under Long Exposure to Light" and "Color Photography by Lippmann's Process," by Charles B. Thwing; "On the Nomenclature for Physical Units, by Alexander Macfarlane; and "Some Experiments in Atmospheric Electricity," by Alexander MacAdie.

C. Chemistry.—This section was presided over by Prof. Robert C. Kedzie, who fills the chair of Chemistry at the Michigan State Agricultural College. His subject was "Alchemy."

Alchemy is often called the forerunner of chemistry, and out of its broken columns there has been built up the enduring temple of chemical science. No science has a firmer basis of known facts than chemistry, the basic principles upon which it is built can be examined without fear that the foundation stones will turn to dust upon the touch of investigation. The results of the labors and discoveries of the alchemists have been of great value to the world, even though the direct objects they sought forever eluded their grasp and left disappointment and despair to their votaries. The objective points of the alchemists were the elixir of life, the alcahest or universal solvent, and the philosopher's stone.

The indestructibility of matter, and the possibility of recovering a given substance notwithstanding all its disguises by combination with other bodies—the persistence of matter and the immanence of its properties—were grand discoveries in material science. They marked the transition from alchemy to chemistry. The recognition of the indestructibility of force was the second great step, the crowning discovery of modern physics. In the words of Faraday, "It is the highest law in physical science which our faculties permit us to perceive."

Shall we take a third step, and proclaim the permanence of force but the destructibility of matter; that the atom may have a life, grow old, and die or pass back into primitive nothingness, or become the ether of which we talk so much and know so little? Shall we assume that radiant force may be changed into matter and fall under the law of gravitation? No single thought has contributed so much to give form and permanence to chemical science as the atom of Dalton. An atomic theory was indeed held by the Greeks in regard to the constitution of matter, but it related chiefly to the question of the continuity or discontinuity of matter in mass, and considered the question of the limited or unlimited divisibility of matter. But the chemical atom, with its application in explaining the law of definite and of multiple proportions by weight in chemical combinations, was the gift of the Quaker schoolmaster of Birmingham.

The question has been seriously raised by an American chemist whether gold can be manufactured. On the affirmative side of this question he points to the fact that didymium has been split into two metals, and by recombining these two new metals the old didymium was again formed. "These facts make it probable that the so-called chemical elements are not

really elements, but compounds, which in time we shall be able to separate into their constituents and to reproduce by combining other substances. Among the heavy elements—and hence those that would be expected to yield to the attacks of the chemist—is gold. It is not improbable that in time it will become possible to make gold in large quantities—an event which would throw it out of use as a standard of value, so far as it derives its own value from its rarity." The statement that didymium is a compound metal is of great interest to the chemist. But the fact that the reunion of these metals will form the old metal or alloy is not so surprising, but is what any chemist would expect. But how do such facts show the probability, or even possibility, of making any given metal out of heterogeneous materials? If the combination of cerium and samarium would form didymium, then a plausible case would be made out. But if praseodymium and neodymium are required to make didymium, how are we nearer the manufacture of this last metal by such discovery? We must still have the two new metals to make the old metal. Suppose that gold can be split into two or ten new metals the reunion of which will form gold, does this bring us one whit nearer the new age of gold? If it takes gold to make gold, what part or lot have baser metals in such transformations?

In conclusion, he said that "the hypothesis of the evolution of the chemical atoms by aggregation or polymerization of one-matter substance challenges scientific thought. Based upon broad assumptions and sustained entirely by analogy, it will hardly disturb the relative coinage value of the metals by holding out hopes of alchemical transmutation. The advice of William Crookes, to treat it simply as a provisional hypothesis, is conservative and wise."

The following-named papers were then read:

"Preliminary Notes on the Influence of Swamp Waters on the Formation of the Phosphate Nodules of South Carolina," by Charles L. Reese; "Land and River Phosphate Pebbles or Nodules of Florida," by Edward T. Cox; "A Latent Characteristic of Aluminium," by Alfred Springer; "The Influence of Negative Atoms and Groups of Atoms on Organic Compounds," by Paul C. Freer; "Gabbro Phonolyte," by Edward Goldsmith; "Raphides the Cause of the Acridity of Certain Plants," by Henry A. Weber; "The Calculation of the Boiling Point of a Paraffin under any Pressure," "The Calculation of the Boiling Points of Isomerics from their Moment of Inertia," and "Determination of the True Position of the Carbon Atoms in Organic Compounds by Means of Analytical Mechanics," by Gustavus Hinrichs; "Distribution of Titanic Oxide on the Earth's Surface," by Francis P. Dunnington; "The Precipitation of Fish Oil in Linseed Oil, when used as an Adulterant, by Silver Nitrate Solution," and "The Separation and Precipitation of Oleic Acid from Linseed Oil by Silver Nitrate," by Thomas Taylor; "Biological Function of the Lecithins," by Walter Maxwell; "Synthesis of Weighed Quantities of Water from Weighed Quantities of Oxygen and Hydrogen," by Edward W. Morley; "Purification of Worcester Sewage by Chemical Precipitation," and "Fire-clay from Mount Savage," by Leonard P. Kinnicutt; "Di-Nitro-Sulfo-Phenol," by Edward Hart; "An Inquiry relative to the Causes leading to the Formation of Ore Deposits," by W. A. Chapman; "Delicacy of the Tests for Phenol," by John G. Spenser; "An Aceto Acetié Ether," by J. U. Nef; "On Plattnerite from Idaho,"

by William S. Yeates; "The Chemistry of Some Disease Germs," and "A Convenient Arrangement for a Pasteur Filter where Air Pressure is available," by Emil A. v. Schweinitz; "Notes on Pinite," "Note on the Chemical Composition of Muck Soil from Florida," and "Composition of Crystalline Artificial Calcium Phosphate," by Harvey W. Wiley; "Meat Preservatives," by J. Thomas Davis; "Determination of Phosphoric Acid in Presence of Iron and Alumina," by William H. King; "Continuous-feed Apparatus for distilling Water," by W. M. Stine; "The Atomic Theory," by Clarence L. Speyers; "Imitation Coffees," by Guilford L. Spencer and Ervin E. Ewell; "The Composition of Floridite," by Harvey W. Wiley and William H. King; "Tri-nitro Toluene, a Substitute for Musk," by William H. Seaman.

A report of the Committee on the Spelling and Pronunciation of Chemical Terms was presented before this section.

D. Mechanical Science and Engineering.—The presiding officer of this section was Prof. Thomas Gray, who fills the chair of Dynamic Engineering in the Rose Polytechnic Institute in Terre Haute, Ind. His address was a carefully prepared and valuable discourse on "Problems in Mathematical Science." It was quite technical in character, and dealt with the teachings of mathematics and physics in their application to engineering. He discussed the instruction in manual-training schools, trade schools, and technical schools, and the objects sought to be attained by training in such schools. Good results followed the adoption of manual training for boys and girls, but the idea of teaching a trade in a trade school was deprecated. It could be far better done in a workshop, where the actual practice could be had by the learner. The old idea of apprenticeship is better in every way. He spoke warmly of the good results that have followed higher education of every sort in technological colleges, and outlined the great benefits that will accrue to mechanical science from this source. The teachings of a more practical character, both in mathematics and theoretical dynamics, were advocated as desirable for technical colleges and similar institutions. Some of the directions in which technical research should be pushed, especially in the technical schools, referring chiefly to the properties of steam and its behavior in steam engines, were indicated. Great results from the direct combustion of fuel in the engine cylinder itself, after the manner in which it is accomplished in the gas engine, were predicted by him. In closing, the very great development of electrical engineering was referred to, especially in its application to street and other motors and to the distribution of power.

The following papers were read before the section:

"Economy produced by the Use of Water injected as a Fine Spray into Air Compressors," "On a Method of holding Samples of Wood and Brick for Determination of Tensile Strength," "Note on the Efficiency of the Screw Propeller," and "Relative Economy of Compound and Triple Expansion Engines," by James E. Denton; "On Experimental Results obtained with a New Form of Direct-Action Propeller," by David P. Todd; "The Government Timber Tests," by Bernhard E. Fernow; "The United States Tests of American Woods, made at the Washington University Testing Laboratory," by John B. Johnson; "On the Crushing of Short Prisms of Homogeneous Material," by Charles L. Bouton; "On Expan-

sion Steam Calorimeters," "Tests of Electric Railway Plant," and "On the Power absorbed in the Cutting of Metals," by Thomas Gray; "Maximum Error due to neglecting the Radiation Correction of a Barrus Universal Calorimeter," and "Relative Economy of Carbonic Acid as the Working Fluid of Refrigerating Machines," by D. S. Jacobus; "On the Efficiency of the Steam Jackets of the Pawtucket Pumping Engine," and "On the Opportunity for Mechanical Research at the World's Fair," by William Kent.

E. Geology and Geography.—This section was presided over by Prof. John J. Stevenson, of the University of the City of New York, who spoke on "The Relations of the Chemung and Catskill on the Eastern Side of the Appalachian Basin."

He prefaced his address with some historical notes respecting early studies of these groups, especially referring to the surveys of Virginia, Pennsylvania, and New York, which were conducted during the years 1837 to 1841. He traced the groups along the eastern outcrop from Tennessee into New York, across southern and western Pennsylvania and eastward through northern Pennsylvania again into New York. In this way the continuity of the section was shown, and the insignificance of the variations was insisted upon strongly. An area in southeastern New York and northeastern Pennsylvania in which the Chemung group is almost without trace of animal or vegetable life through the greater part of the thickness was described. The absence of life was thought to be due not to fresh water, but to turbidity of the water in a shallow basin near the land. The facts that the horizons of fish remains are much lower in the column than had been supposed, and that the plant remains come in like manner from the home group, were thought to be of especial interest and importance.

His conclusions were:

1. That the series, from the beginning of the Portage to the end of the Catskill, form but one period, the Chemung, which should be divided into three epochs: the Portage, the Chemung, and the Catskill.
2. That the disappearance of animal and vegetable life on so great a part of this area toward the close of the period was due simply to gradual extension of conditions existing, perhaps, as early as the Hamilton period in southeastern New York.
3. That the deposits were not made in a closed sea, but that the influx of great rivers, with their load of *débris*, made conditions in the shallow basin such that animal life could not exist.
4. That in the present state of our knowledge we are not justified in including the Chemung period in the carboniferous age.

The following-named papers were read before the section:

"Source of Supply to Lateral and Medial Moraines," by John T. Campbell; "New Meteoric Iron from Arizona containing Diamonds," by A. E. Foote; "Post-glacial Anticlinal Ridges near Ripley and Caledonia, New York," by Grove K. Gilbert; "Purposes of Mountain Building and their Relationship to the Earth's Construction," by Warren Upham; "Notes on an Extinct Volcano at Montreal, Canada," by Henry Lampard; "On a New Horizon of Fossil Fishes," and "On the Cranial Characters of *Equus excelsus* Leidy," by Edward D. Cope; "On Problematic Organisms and the Preservation of Algae as Fossils," and "On the Age of the Mount Pleasant, Ohio, Beds," by Joseph F. James; "Preliminary Report of Observations at the Deep Well near Wheeling, W. Va.," by William Hallock; "The Eureka Shale of Northern Arkansas," by Thomas C. Hopkins;

"The Attitude of the Eastern and Central Portions of the United States during the Glacial Period," by Thomas C. Chamberlin; "Neocene and Pleistocene Continent Movements," by W. J. McGee; "Fossil Tracks in the Triassic of York County, Pa.," by Atrous Wanner; "New Footprints of the Connecticut Valley," by M. N. Mitievier; "The Plant-Bearing Deposits of the American Trias," and "Principles and Methods of Geologic Correlation by means of Fossil Plants," by Lester F. Ward; "A Reply to Professor Marsh's Note on Mesozoic Mammalia," by Henry F. Osborn; "Exhibition of Certain Bones of *Megalonyx* not before known," by James M. Safford; "On the Probable Existence of a Second Driftless Area in the Mississippi Basin," by Rollin D. Salisbury; "The Cincinnati Ice Dam," by Frank Leverett; "The Structure of the Ouachita Uplift of Arkansas," by Leon S. Griswold; "The Relations of the Archean and the Algonkian in the Northwest," by Charles R. Van Hise; "Results of a Well Boring at Rochester, N. Y.," by Herman L. Fairchild; "On a Deep Bore near Akron, Ohio," by Edward W. Claypole; "A Study of the Fossil Avifauna of the Silver Lake Region, Oregon," by R. W. Shufeldt; "The Peninsula and Volcano Cosignina," and "The Geological Survey of Nicaragua," by John Crawford; "The Highest Old Shore Line on Mackinac Island," by F. B. Taylor; and "Striae and Slickensides at Alton, Illinois," by James E. Todd.

F. Biology.—This section was presided over by Prof. John M. Coulter, President of Indiana University. He chose for the topic of his address "The Future of Systematic Botany." The ancient history of systematic botany is too well known to need even brief repetition, but the one desire which runs with increasing force through it all is to reach eventually a natural system of classification. At first, from necessity, plants were simply systematically pigeon-holed for future reference, and those who could thus dispose of plants were known as "systematic botanists," an appellation proper enough, but one unfortunately not having sufficiently outgrown its original application. The deplorable result of this early necessity of so rigidly systematizing facts, and thus rendering them accessible, was to make the pigeon-holes as permanent as the facts they were intended temporarily to contain.

Systematic botany has probably done all that it could, unaided, in the natural arrangement of plants. But it was not left without aid, and a group of new departments was made possible by the microscope and the unexampled progress of powers and manipulation. The study of the cell and of nascent and mature organs, and the recognition of plants as living things that are the resultant of the interplay of internal and external forces, have revived the ancient mummy called botany, and have made it a living thing, capable of endless development. The real systematic botany is to sum up and utilize the results of all other departments, and its work is well-nigh all in the future. The systematic botany which deals with generic characters and recognizes the fact that every plant is a living thing, with a history and all degrees of consanguinity, and that the final form of every natural classification must be to approximate to the order of descent, is in its early infancy.

For the systematists of to-day and of the future there must be three distinct lines of work, related to each other in natural sequence in the order presented, and each turning over its completed product to the next.

I. Collection and Description of Plants.—Many things besides the mere sporadic collection and recording of species should be included as legitimately belonging to this line of research. A plant is too often a text without any context, and is thus robbed of much of its significance. Nothing seems more unsystematic than field work in systematic botany. All information that can be obtained in the field concerning species is the province of the collector to procure and of the taxonomist to record.

In reference to the work of description, an unpublished note of Prof. Asa Gray, in which that distinguished botanist lamented the work of those who were incompetent, was read. The opinion that the exclusive use of gross organs in the description of higher plants would be given up, and that the more stable, minute characters would prove valuable aids in steadying diagnosis, was expressed. The character of a species is an extremely composite affair, and it must stand or fall by the sum total of its peculiarities, and not by a single one.

II. Study of Life Histories.—The work of searching for the affinities of great groups is the crying need of systematic botany to-day. The danger of magnifying the importance of certain periods or organs in indicating affinities, was summed up as follows: "I have thus spoken of the study of life histories to indicate that its chief function lies in the field of systematic botany: to suggest that it take into account development at every period and of every organ, and so obtain a mass of cumulative evidence for safe generalization; and to urge upon those not thoroughly equipped great caution in publication."

III. Construction of a Natural System.—The necessity of constructing a natural system with easy advance in the knowledge of affinities, as a convenient summary of information, to tell of progress and to direct future effort, was advocated. His concluding summary was: "The points presented in this consideration of the third phase of systematic botany are that the last and highest expression of systematic work is the construction of a natural system, based upon the accumulations of those who collect and describe and those who study life histories; that this work involves the completest command of literature and the highest powers of generalization; that it is essential to progress for a natural system to be attempted with every advance in knowledge; and that all the known facts of affinity thus brought within reach should be expressed in all systematic literature."

The following-named papers were read before this section:

"Notes on the Physiological and Structural Changes in Cayuga Lake Lampreys," and "Notes on the Heart of Certain Mammals," by Ida H. Hyde; "The Transformation of the Vermilion Spotted Newt," by Simon H. Gage; "On the Kinds of Motion of the Ultimate Units of Contractile Living Matter," by John A. Ryder; "On the Insertion of the Scapular and Pelvic Arches and Limbs of *Lacertilia*," and "On Coloration in Certain Reptilia," by Edward D. Cope; "On the Structure and Dimorphism of *Hypocrea tuberiformis*," by George F. Atkinson; "Another Chapter in the History of the Venus Fly-Trap," by John M. Macfarlane; "On the Prothallium and Embryo of *Osmunda Claytoniana* and *O. Cinnamomen*," by Doug-

ing H. Campbell; "A New Nectria," "Notes upon Bacteria of Cucurbits," and "Notes upon an Anthracnose," by Byron D. Halstead; "The Composite collected by Dr. Edward Palmer in Coffina," and "The Flora of Carmen Island," by Joseph N. Rose; "Uses of the Fermentation Tube in Bacteriology, with Demonstrations," by Theobald Smith; "The Foraminifera, with a New Device for the Exhibition of Specimens," by James M. Flint; "A Monograph of the Carolina Parakeet," by Edwin M. Hasbrouck; "Transpiration, or the Loss of Water in Plants," by Charles E. Bessey and Albert F. Woods; "Movement of Fluids in Plants," by William J. Beal; "Absorption of Fluids by Plants," by L. H. Pammel; "Gases in Plants," by J. C. Arthur; "Origin and Development of Parasitic Habit in Mallophaga and Pediculidae," by Herbert Osborn; "The Origin and Development of Parasitism among the Sarcophagidae," by Harrison Garman; "On the Habits of the Proctotrypidae," by William H. Ashmead; "The Biology of the Chalcididae," by Leland O. Howard; "Parasitism in Coleoptera, in Diptera, in Braconidae, and Ichneumonidae," and "Micro-organisms as Insecticides," by Charles V. Riley; "Enemies of the Honey-Bee," and "Abnormal Bees," by Albert J. Cook; "Notes on the Homology of the Hemipterous Moth," "Epipharynx and Hypopharynx of Odonata," and "The Mouth of *Copris Carolina*, and Notes on the Homology of the Mandible," by John B. Smith; "On the Phylogeny of the Archegoniata," by Douglas H. Campbell; "On the Ejection of Blood from the Eyes of Horned Toads," and "On the Turtles of the Genus *Malaclemys*," by O. P. Hay; "The Present Condition of the Study of the Deep-sea Fishes," by G. Brown Goode; "On the Importance of a Table at the Naples Station," by Charles W. Stiles; "Further Observations on a Bacterial Disease of Oats," by B. T. Gallo-way; "Botanical Field-work of the Botanical Division," by George Vasey; "Results from Recent Investigations of Pear Blight," by M. B. Waite; "The Spectroscope in Botanical Studies," by John A. Brashear; "The Persistence and Relation of Faunal Realms," and "The New Zealand Fish Fauna," by Theodore Gill; "A Case of the Loss of Sense of Smell," and "A Novel Color Illusion, and a New Method of Color Mixture," by Joseph Jastrow; "Modification of Habit in Paper-making Wasps," by Mary E. Murtfeldt; and "The Fate of the Fur Seal in American Waters," by William Palmer.

H. Anthropology.—This section was presided over by Prof. Joseph Jastrow, who fills the chair of Experimental and Comparative Psychology in the University of Wisconsin. His address was entitled "The Natural History of Analogy." Analogy was a very predominant method of argument among primitive people. He defined analogy by speaking of infants of a further degree of resemblance from a given degree of resemblance. The various types of agreement differing slightly from the standard were also treated. In almost all savage customs and beliefs, he said, abundant instances of reasoning by analogy were to be found. In magical practices, in interpretations of omens and dreams, in medicinal practices and social and tribal customs, striking instances of analogous argument abounded. The Zulu who chews a bit of wood to soften the heart of the man he wants to buy an ox from, the fetich determining by whether a stick stands or falls whether a war shall be kept up or allowed to stop; the medicine-man who performs incantations over some personal belonging of his victim or by the use of out-of-the-way drugs—all these were instanced as the results of analogy or a feeling of analogy. Similar traits in children were described and illus-

trated. He said that an abundant field of illustration was found in the popular superstitions, folk lore, and customs that have survived from a lower to a higher culture. The modern dream-book, household medicinal practices, charms, and, in the more elaborate system of details of astrology, the doctrine of sympathies and kindred pseudo-sciences, were the fields from which he took his illustrations. From this, progressive scientific thought had reached its present place instead of the shifting position once occupied by the argument of analogy. He concluded with: "That which was serious reasoning to our forefathers, now takes its place as a proper instrument for amusement and lies at the basis of a joke. This offspring of our race is also connected by history with this earlier form; and, furthermore, close relation is traced between the by-paths of modern civilization and the outgrown forms of culture among which it originated."

The following are the titles of the papers read before the section:

"The Essentials of a Good Education, with a New Classification of Knowledge," by William H. Seaman; "The Custom of Kava Drinking as practiced by the Papuans and Polynesians," by Walter Hough; "A Linguistic Map of North America," by John W. Powell; "Jade Implements from Mexico and Central America," and "Gold Ornaments in the United States National Museum from the United States of Colombia," by Thomas Wilson; "Siouan Onomatopoeic Interjections, and Phonetic Types," and "Games of Teton Dakota Children," by J. Owen Dorsey; "On a Collection of Stone Pipes from Vermont," and "On Bone, Copper, and Slate Implements found in Vermont," by George H. Perkins; "The Importance and Methods of the Science of Comparative Religion," by Merwin M. Snell; "An Experiment in Human Stirpiculture," by Anita N. McGee; "Relics of Ancient Mexican Civilization," by Zelia Nuttall; "Bow-Stretchers," and "Prehistoric Bows," by Edward S. Morse; "The Nez Perce Country," by Alice C. Fletcher; "Relation of a Loveland (Ohio) Implement-bearing Terrace to the Moraines of the Ice-Sheet," by Frank Leverett; "Utility of Psychological Study of Child Life," by Laura O. Talbot; "Origin of the Name Chautauqua," by Albert Gatschet; "Outlines of Zuñi Creation and Migration Myths considered in their Relation to the Ka-ka and other Dramas or So-called Dances," by Frank H. Cushing; "An Ancient Human Cranium from Southern Mexico," by Frederick W. Putnam; "The Length of a Generation," by Calvin M. Woodward; "Burial Customs of the Hurons," by Charles A. Hirschfelder; "The Messiah Religion and the Ghost Dance," by James Mooney; "Study of a Dwarf," by Frank Baker; "Stone Drills and Perforations in Stone from the Susquehanna River," by Atreus Wanner; "Geographical Arrangement of Prehistoric Objects in the United States National Museum," "Curious Forms of Chipped Stone Implements found in Italy, Honduras, and the United States," "Inventions of Antiquity," and "Evidences of the High Antiquity of Man in America," by Thomas Wilson; "Some Archaeological Contraventions," by Gerard Fowke; "On the Distribution of Stone Implements in the Tide-water Province," and "Aboriginal Novaculite Quarries in Arkansas," by William H. Holmes; "Study of Automatic Motion," by Joseph Jastrow; "Race Survivals and Race Mixture in Great Britain," by W. H. Babcock.

I. Economic Science and Statistics.—The presiding officer of this section was Prof. Edmund J. James, who holds the chair of Public Finance and Administration in the Wharton School of Finance and Economy of the Univer-

sity of Pennsylvania. His theme was "The American Farmer, his Present Economic Condition and Future Prospects." The condition of the farming class is at present exciting keen attention in nearly every civilized country. The politics and economics of the United States, England, France, Germany, Austria, and even Russia, are busied to-day with the farmer as they never were before. The farmer question, therefore, is no longer a local question, no longer confined to the United States, but is world-wide in its importance, and must be considered to some extent in its international aspects. The remarkable phenomena occurring in connection with the Farmers' Alliance movements show at once how deeply the iron has entered into the soul of the American farmer, and how thoroughly he has become aware that for some reason or other he is not keeping pace in his material, intellectual, and social progress with other classes in the community. It is not surprising that in this awakening he should not at first perceive the true source of his ills, and that he should attribute many of the disadvantages under which he labors to the machinations of other social classes. It is natural that he should see in the railroads, in the gold bugs of Wall Street, in the tariff on imports, in the banks and bankers, and in the monetary policy of the Government, the bitter enemies of his prosperity. Nothing will be gained for us, either from an economic or political point of view, by belittling or deriding the views of Western farmers on the money question, on the tariff, on the railroad policy, on taxation, and other similar topics. The American farmer has a grievance which must be carefully studied by students of economics and statistics, to ascertain, if possible, how far it is justified, and whether it can be remedied, and, if so, by what means.

The wealth of the United States is flowing away from its farms into its factories and railroads; from the country into the city; from the rural into the urban districts. The policy of our railroad companies has borne hard upon the individual farmer and upon the farmer as a class. It has altered all the conditions of agriculture in many sections of the country, and in nearly all of them in such a way as needlessly to burden and embarrass the farmer. The Granger legislation of the Western States was a perfectly justifiable attempt to check the wanton aggression of many railroad managers upon the fundamental rights of the rural classes, and, though it was at many points unsuccessful, it was the first distinct step in a policy of controlling railroad management in the interests of the public. Our system of taxation as a whole rests most heavily upon the farmer.

Nor is there any doubt that the financial policy of the country, using that term in the broadest sense, as including the whole system of monetary transactions built up by the combination of governmental action and private initiative, discriminates very directly and keenly against the farmer and the farming class. Nor can it be said that the tariff policy of the country has been managed, at least directly, with an eye as much to the farmer's interest as to that of other classes.

It is no wonder, then, that the American farmer is in a bad way, and likely to be in a

worse one. Along what line does improvement lie? In the first place, of course, in the direction of altering the influences above referred to. Railway policy must be altered at many points—at some of them fundamentally. The system of taxation must be readjusted and the farmer relieved of unjust burdens. The tariff must be improved; the banking and general monetary policy of the country changed in many respects.

The forces which are crowding the American farmer to the wall are world-wide, and not merely national forces. He is going to the wall because he is trying to compete with farmers of a low grade of intelligence and civilization in the production of crops where intelligence and civilization count for comparatively little.

The American farmer must seek new crops where intelligence and skill count for more than mere fertility of soil or juxtaposition to market, and where, having once established himself, he may bid defiance to the ignorance and inefficiency of the foreign peasant. This calls for a broad and liberal policy toward agriculture in all its relations.

If our farmers' alliances, grangers' associations, horny-handed sons of toil conventions, etc., would, with all their getting, get understanding, would, after securing—or better, while securing—needed reforms in the railway, tax, tariff, and monetary policy of the country, go to the very root of the matter, viz., remedy the indolence, ignorance, conservatism of the farming classes themselves in all that pertains to agriculture, no American could have cause to fear even the wildest propositions of the flat-money anti-corporation demagogue.

The following-named papers were read:

"The Necessity for State Supervision of Railway Extension," by Benjamin W. Snow; "The Economic Value of Cooking-Schools in the District of Columbia," by Laura O. Talbott; "The Code of Inheritance," by Richard T. Colburn; "Numerical Relations between Amount and Value of United States Potato Crop and Amount of Importations," and "United States Mercantile Marine and Duty Rates," by Henry Farquhar; "The Muck Soils of the Florida Peninsula," by Harvey W. Wiley; "The Artesian Wells and Underground Waters of Central Texas," by Robert T. Hill; "Energy as a Factor in Rural Economy," by Manly Miles; "World's Columbian Exposition," by Alexander D. Alexander; "Free Coinage: why not?" by Edward Atkinson; "The Coinage Ratio in our Silver Policy," by Edward T. Peters; "The Eleventh Census and Statistics of Manufacture," and "Permanent Census Bureau," by George A. Priest; "Tabulation Errors of Census," by Mrs. M. C. Baker; "The Locust or Grasshopper Outlook," by Charles V. Riley; "Immigration as an Economic Sociologic Problem," and "The Economy and Thrift of Machinery," by Charles S. Hill; "The Census-counting Machine," by John S. Billings; "On a Measure of the Reliability of Census Enumeration," by Alexander S. Christie; "A National University: its Character and Purposes," and "The Science and Art of Government," by Lester F. Ward; "The Southern Old Fields," by W. J. McGee; "Agriculture by Irrigation: Some Social Economic Possibilities," by Richard J. Hinton; "Water Management the Problem of the Future," by Bernhard E. Fernow; and "The Needs of the American Flax-fiber Industry," by Charles R. Dodge.

Popular Features of the Proceedings.—On the evening of Aug. 19 a reception was given to the association by the Board of Trade of

Washington, in the parlor of the Arlington, at which numerous addresses were made, including one by Secretary Foster. A musical entertainment in the private grounds of the Executive Mansion, at which the United States Marine Band played, was given to the association, by direction of the President, on Aug. 20. A lecture complimentary to the citizens of Washington was delivered, on the evening of Aug. 21, in the United States National Museum, by Dr. John M. Macfarlane, on "Illustrations of Heredity in Plant Hybrids," subsequent to which the museum was thrown open to the members for inspection of the collections. On Aug. 24 an excursion to Baltimore, by special train, was provided for. Upon arrival at Locust Point the steamer "Latrobe" met the party and proceeded across the bay to the Maryland Steel Company's works at Sparrow's Point, where the blast furnaces, Bessemer steel converter, and steel rolling mills were inspected. After luncheon on the steamer, a visit was paid to the Baltimore Sugar Refinery. The steamer then returned to the city, and the party visited the Johns Hopkins Hospital and the Johns Hopkins University. A complimentary excursion to Mount Vernon was tendered on Aug. 25 to the association by the scientific societies of Washington. Three general excursions were arranged for, as follow: (1) To Harper's Ferry and Luray, visiting the famous caverns; (2) to Atlantic City, visiting the lighthouse and life-saving station; and (3) to Old Point Comfort, Norfolk, and Virginia Beach, visiting Fort Monroe, Hampton, the Soldiers' Home, Normal School, and other features. Throughout the meeting, through the courtesy of the department chiefs, the various Government bureaus were opened to the members of the association, and on the afternoon and evening of Aug. 24 the Corcoran Gallery was opened to the visiting scientists.

Affiliated Organizations.—Prior to the meeting of the association the American Microscopical Society was convened on Aug. 11 and 12. The Association of American Agricultural Colleges and Experiment Stations held daily sessions on Aug. 13, 14, and 15. Under the terms of the trust which endows in perpetuity the agricultural work of Lawes and Gilbert at Rothamsted, England, a representative of this place is to visit America every three years as an exponent of its work. The first of these visits occurred during the Washington meeting, and Robert Warrington, F. C. S., the chemist at Rothamsted, was the representative. The Association of Official Agricultural Chemists met on Aug. 13, and held sessions for two days. The Society for the Promotion of Agricultural Science held its meetings on Aug. 17 and 18. A conference of American chemists, under the auspices of the American Chemical Society and the Washington Chemical Society, met on Aug. 17 and 18. The Association of Economic Entomologists convened on Aug. 18 and 19. J. A. Lintner, of Albany, N. Y., was chosen president of this body. The Botanical Club of the association held regular meetings on Aug. 20, 21, and 22. Prior to the regular meetings of the association William M. Canby was its president. Similarly the Entomological Club of the association met daily during the meeting.

After the meeting of the association the Geological Society of America held its summer meeting, on Aug. 24 and 25; and, finally, the International Congress of Geologists began its meetings on Aug. 26, and continued them with daily sessions until Sept. 1.

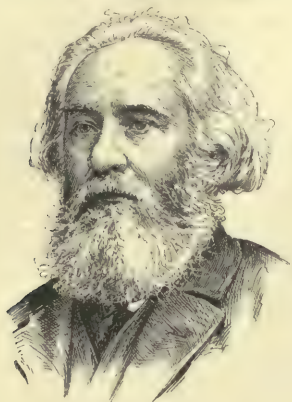
Final Sessions.—The final general meeting was held on the evening of Aug. 25, at which time the list of officers given below was elected, and the place of the next meeting decided on. A proposition to increase the research funds was advocated by John A. Brashear, who fixed the limit at \$100,000, and a committee was appointed, of which he was made chairman.

The Committee on Forestry reported that its efforts had, in part, at least, caused a change in the laws regulating public lands, which authorizes the President to use his discretion in the disposal of public timber lands. The report showed that the American Forestry Association had prepared a memorial, in which reservations, comprising several million acres will be asked in Minnesota, Montana, Idaho, Colorado, New Mexico, and California, and in the enlarged boundaries of the Yellowstone Park. The committee was continued to enable it to carry on the work of securing the enactment of such laws as will protect and provide for the administration of the lands thus reserved. Action was also taken upon a recommendation from the section on biology, favoring the petitioning of Congress for the establishing in the District of Columbia of an arboretum, under the direction of the Department of Agriculture. A resolution was also adopted calling the attention of the Secretary of Agriculture to the advisability of utilizing the Weather Bureau, the various agricultural experiment stations, and institutions of a similar character, for the purpose of forming a service of water statistics and making a careful survey of the condition of water supplies, which may serve as a basis for the application of proper principles of water management. Agreeably to a communication from the Australasian Association for the Advancement of Science, a committee was appointed to form part of an international committee to make a uniform system of biological nomenclature, that committee being Simon H. Gage, Charles T. Minot, John M. Coulter, Theodore Gill, and George L. Goodale. The meeting as a whole was a most successful one; 291 papers were read before the sections, against 259 for last year. There were 653 members in attendance, in comparison with 364 last year; and subsequent to Aug. 18, 91 new names were added to the list, making a total of 371 members elected since the meeting last year.

Next Meeting.—In 1892 the association will meet in Rochester, N. Y., and the time appointed is the third Wednesday in August. The following officers were chosen: President, Joseph Le Conte, Berkeley, Cal. Vice-Presidents: A. John R. Eastman, Washington, D. C.; B. Benjamin F. Thomas, Columbus, Ohio; C. Alfred Springer, Cincinnati, Ohio; D. John B. Johnson, St. Louis, Mo.; E. Henry S. Williams, Ithaca, N. Y.; F. Simon F. Gage, Ithaca, N. Y.; H. William H. Holmes, Washington, D. C.; I. S. Dana Horton, Pomeroy, Ohio. Permanent Secretary, Frederick W. Putnam, Cambridge, Mass. General Secretary, Amos W. Putnam, Brookville, Ind. Secre-

tary of the Council, Thomas H. Norton, Cincinnati, Ohio. Secretaries of Sections: A, Winslow Upton, Providence, R. I.; B, Brown Ayres, New Orleans, La.; C, James L. Howe, Louisville, Ky.; D, Olin H. Landreth, Nashville, Tenn.; E, Rollin D. Salisbury, Madison, Wis.; F, Byron D. Halstead, New Brunswick, N. J.; H, Anthropology, Stewart Culin, Philadelphia, Pa.; I, Lester F. Ward, Washington, D. C. Treasurer, William Lilly, Mauch Chunk, Pa.

British.—The sixty-first annual meeting of the British Association for the Advancement of Science was held in Cardiff during the week beginning Aug. 19. The officers of the association were: President, Dr. William Huggins. Section



WILLIAM HUGGINS.

Presidents: A, Mathematics and Physics, Oliver J. Lodge; B, Chemistry, W. C. Roberts-Austen; C, Geology, T. Rupert Jones; D, Biology, Francis Darwin; E, Geography, E. G. Rowenstien; F, Economic Science and Statistics, W. Cunningham; G, Mechanical Science, T. Forster Brown; H, Anthropology, Max Müller. General Treasurer, Arthur Rücker. General Secretaries: Sir Douglas Galton and Vernon Harcourt; and Thomas Forster Brown, Chairman of the Local Executive Committee.

General Meeting.—The first general meeting was held on Aug. 19, with Sir Frederick A. Abel in the chair. The address of welcome was made by the Marquis of Bute, who was chairman of the Local Committee and Mayor of Cardiff. The report of the General Committee was presented and accepted, subsequent to which the incoming president, Dr. William Huggins, was called to the chair. His address was delivered in the evening in Park Hall.

Address of the President.—Since 1851, when Sir George Airy, and 1860, when Lord Wrottesley, were presidents of the association, no representative of astronomy had been chosen to that office. It was therefore natural that Dr. Huggins should select as the subject of his discourse the history of the discoveries that have taken place in his chosen science during the past thirty years. He told how spectroscopic astronomy had become a distinct and acknowledged branch of that science. Within the last year or two improvements had been made in the spec-

troscope itself by Lord Rayleigh, and by Prof. Henry A. Rowland in the construction of concave gratings. Although up to the present time Ångström's map of the solar spectrum has been accepted as the standard of reference, still, in the near future, that of Rowland will be adopted, and its greater accuracy is due chiefly to the introduction by him of concave gratings and of a method for their use by which the problem of the determination of relative wave lengths is simplified to measures of coincidences of the lines in different spectra by a micrometer. The recent attempts to distinguish the lines which are due to our atmosphere from those which are truly solar were described. Concerning the nature of the heavenly bodies, all that can be positively asserted is, that the spectroscope reveals to us the waves which were set up in the ether, filling all interstellar space, years or hundreds of years ago, by the motions of the molecules of the celestial substances. Great caution must be observed when attempts are made to reason by the aid of laboratory experiments as to the temperature of the heavenly bodies. Of recent researches in this direction, the claim of Stas that electric spectra are to be regarded as distinct from flame spectra was mentioned, but it must not be forgotten that the light from the heavenly bodies may consist of the combined radiations of different layers of gas at different temperatures, and possibly be further complicated to an unknown extent by the absorption of cooler portions of gas outside.

As yet the spectroscope has failed to interpret for us the remarkable spectrum of the aurora borealis. Undoubtedly in this phenomenon portions of our atmosphere are lighted up by electric discharges; we should expect, therefore, to recognize the spectra of the gases known to be present in it. Especially we do not know the origin of the principal line in the green. Recently the suggestion has been made that the aurora is a phenomenon produced by the dust of meteors and falling stars, and that near positions of certain auroral lines or flutings of manganese, lead, barium, thallium, iron, etc., are sufficient to justify us in regarding meteoric dust in the atmosphere as the origin of the auroral spectrum.

Reference was made to the work on the "Spectra of the Comets," by Prof. Hubert A. Newton and Prof. Schiaparelli. Concerning the constitution of the sun, a very great advance has been made by the recent work at the Johns Hopkins University, by means of photography and concave gratings, in comparing the solar spectrum directly with the spectra of the terrestrial elements. Prof. Rowland has shown that the lines of thirty-six terrestrial elements at least are certainly present in the solar spectrum, while eight others are doubtful. Of those not found, many are so classed because they have few strong lines, or none at all, in the limit of the solar spectrum as compared by him with the arc. Rowland has not found any lines common to several elements, and, in the case of some accidental coincidences, more accurate investigation reveals some slight difference of wave length or a common impurity. Stas, in a recent paper, gives the final results of eleven years of research on the chemical elements in a state of purity, and on the possibility of decomposing them by the physical and chemical forces at our disposal. His experiments on cal-

cium, strontium, lithium, magnesium, silver, sodium, and thallium show that these substances retain their individuality under all conditions, and are unalterable by any forces that we can bring to bear upon them. Prof. Rowland looks to the solar lines which are unaccounted for as a means of enabling him to discover such new terrestrial elements as still lurk in rare minerals and earths, by confronting their spectra directly with that of the sun. He has already resolved yttrium spectroscopically into three components, and actually into two. It is worthy of remark that, as our knowledge of the spectrum of hydrogen in its complete form came to us from the stars, it is now from the sun that chemistry is probably about to be enriched by the discovery of new elements.

Passing to the sun's corona, recent investigations were cited, including those of Prof. Schaeberle, of Lick Observatory; but, still, of its chemical and physical nature we know very little. The behavior of gaseous matter during condensation and the probable resulting constitution of the heavenly bodies was then taken up. The view has been put forth that the diversified spectra of the stars do not represent the stages of an evolutionary progress, but are due for the most part to differences of original constitution. But the sun and stars are generally regarded as consisting of glowing vapors surrounded by a photosphere where condensation is taking place, the temperature of the photospheric layer from which the greater part of the radiation comes being constantly renewed from the hotter matter within.

As to the life of a star, he said:

Passing backward, we should find a gradual weakening of gravity at the surface, a reduction of the temperature gradient so far as it was determined by expansion, and convection currents of less violence producing less interference with the proportional quantities of gases due to their vapor densities, while the effects of eruptions would be more extensive. At last we might come to a state of things in which, if the star were hot enough, only hydrogen might be sufficiently cool relatively to the radiation behind to produce a strong absorption. The lower vapors would be protected, and might continue to be relatively too hot for their lines to appear very dark upon the continuous spectrum; besides, their lines might be possibly to some extent effaced by the coming in under such conditions in the vapors themselves of a continuous spectrum.

In connection with the temperature of stars, he told how Samuel P. Langley, of Washington, D. C., showed that through the whole range of temperature on which we can experiment, and presumably at temperatures beyond, the maximum of radiation power in solid bodies gradually shifts upward in the spectrum from the infra-red through the red and orange, and that in the sun it has reached the blue. All the heavenly bodies are seen by us through the tinted medium of our atmosphere. According to Langley, the solar stage of stars is not really yellow, but, even as gauged by our imperfect eyes, would appear bluish white if we could free ourselves from the deceptive influences of our surroundings. Of the nebulae he told how the elder Herschel saw portions of the fiery mist or "shining fluid" out of which the heavens and the earth had been slowly fashioned. For a time this view of

the nebulae gave place to that which regarded them as external galaxies, cosmoical "sand heaps," too remote to be resolved into separate stars.

Then, discussing the various theories advanced concerning their constitution, he said: "On account of the large extent of the nebulae, a comparatively small number of luminous molecules or atoms would probably be sufficient to make the nebulae as bright as they appear to us. On such an assumption the average temperature may be low, but the individual particles, which by their encounters are luminous, must have motions corresponding to a very high temperature, and in this sense be extremely hot." Hence "it may well be that in the very early stages condensing masses are subject to very different conditions, and that condensation may not always begin at one or two centers, but sometimes sets in at a large number of points, and proceeds in the different cases along different lines of evolution." By the spectroscopic motions of approach or of recession of the stars can be detected and measured, so that under favorable circumstances the speed can be determined to within a mile a second. Of the application of photography to this branch of astronomical work mention was made, and the brilliant results obtained at Lick Observatory by Keeler cited. This spectroscopic method of determining celestial motions in the line of sight has recently become fruitful in a new but not altogether unforeseen direction, for it has, so to speak, given us a separating power far beyond that of any telescope the glassmaker, and the optician could construct, and so enabled us to penetrate into mysteries hidden in stars apparently single, and altogether unsuspected of being binary systems. From other directions information is accumulating—from photographs of clusters and parts of the Milky Way, by Roberts, in this country, Barnard, at the Lick Observatory, and Russell, at Sydney; from the counting of stars and the detection of their configurations by Holden and by Backhouse; from the mapping of the Milky Way by eye at Parsonstown; from photographs of the spectra of stars by Pickering at Harvard and in Peru; and from the exact portraiture of the heavens in the great international star chart which begins this year.

There are many other problems which might claim our attention. The researches of the Earl of Rosse on lunar radiation, and the work on the same subject and on the sun by Langley; observations of lunar heat with an instrument of his own invention by Boys, and observations of the variation of the moon's heat with its phase by Very; the discovery of the ultra-violet part of the hydrogen spectrum, not in the laboratory, but from the stars; the confirmation of this spectrum by terrestrial hydrogen in part by Vogel, and in its all but complete form by Cornu, who found similar series in the ultra-violet spectra of aluminium and thallium; the discovery of a simple formula for the hydrogen series by Balmer; the important question as to the numerical spectral relationship of different substances, especially in connection with their chemical properties; and the further question as to the origin of the harmonic and other relations between the lines and the groupings of lines

of spectra; the remarkable employment of interference phenomena by Albert A. Michelson for the determination of the size, and distribution of light within them, of the images of objects which when viewed in a telescope subtend an angle less than that subtended by the light-wave of a distance equal to the diameter of the objective. Along the older lines there has not been less activity; by newer methods, by the aid of larger or more accurately constructed instruments, by greater refinement of analysis, knowledge has been increased, especially in precision and minute exactness. Then he closed with: "Since the time of Newton our knowledge of the phenomena of Nature has wonderfully increased, but man asks, perhaps more earnestly now than in his days, What is the ultimate reality behind the reality of the perceptions? Are they only the pebbles of the beach with which we have been playing? Does not the ocean of ultimate reality and truth lie beyond?"

A. Mathematical and Physical Science.—The presiding officer of this section, Prof. Oliver J. Lodge, began his address with a reference to the Faraday centenary, the decease of Wilhelm Weber (one of the originators of that absolute system of measurement which has done so much for the unification of physical science), the discovery in America of a binary system of stars, and the practical discovery of a physical method for color photography. After commenting on these four events, he passed to the discussion of the desirability or necessity of a permanent government physical laboratory. Such a laboratory would be the natural custodian of our standards, in a state fit for use and for comparison with copies sent to be certified.

There are many experiments which can not possibly be conducted by an individual, because forty or fifty years is not long enough for them. Secular experiments on the properties of materials—the elasticity of metals, for instance; the effect of time on molecular arrangement; the influence of long exposure to light, or to heat, or to mechanical vibration, or to other physical agents.

Does the permeability of soft iron decay with age by reason of the gradual cessation of its Ampèrian currents? Do gases cool themselves when adiabatically preserved by reason of imperfect elasticity or too many degrees of freedom of their molecules? Do thermo-electric properties alter with time? And a multitude of other experiments which appear specially applicable to substances in the solid state—a state which is more complicated and has been less investigated than either the liquid or the gaseous—a state in which time and past history play an important part. Whichever of these long researches requires to be entered on, a national laboratory, with permanent traditions and a continuous life, is undoubtedly the only appropriate place.

The question whether it has not been established by direct experiment that a method of communication exists between mind and mind irrespective of the ordinary channels of consciousness and the known organs of sense, and, if so, what is the process?

It can hardly be through some unknown sense organ, but it may be by some direct physical influence on the ether, or it may be in some still more subtle manner. He said: Of the process I as yet know nothing. For brevity it may be styled "thought-transference," though the name may turn out to be an unsuitable one after further investigation. Further investigation is just what is wanted.

Then, discussing the means of attacking this problem, he said:

A vulnerable spot on our side seems to be the connection between life and energy. The relation of life to energy is not understood. Life is not energy, and the death of an animal affects the amount of energy no whit; yet a live animal exerts control over energy which a dead one can not. Life is a guiding or directing principle, disturbing to the physical world, but not yet given a place in the scheme of physics. The transfer of energy is accounted for by the performance of work; the guidance of energy needs no work, but demands force only. What is force? and how can living beings exert it in the way they do? In some way matter can be moved, guided, disturbed, by the agency of living beings; in some way there is a control, a directing agency, active, and events are caused at its choice and will that would not otherwise happen. Now I say that the doctrine of ultimate intelligibility should be pressed into other departments also. At present we hang back from whole regions of inquiry and say they are not for us. A few we are beginning to grapple with. The nature of disease is yielding to scrutiny with fruitful result; the mental aberrations and abnormalities of hypnotism, duplex personality, and allied phenomena are now at last being taken under the wing of science, after long ridicule and contempt. The phenomenon of crime, the scientific meaning and justification of altruism, and other matters relating to life and conduct, are beginning to show a vulnerable front over which the forces of science may pour. Facts so strange that they have been called miraculous are now no longer regarded as entirely incredible. All occurrences seem reasonable when contemplated from the right point of view, and some are believed in which in their essence are still quite marvelous. The possibilities of the universe are as infinite as is its physical extent. I seem to myself to catch glimpses of clues to many of these old questions, and I urge that we should trust consciousness, which has led us thus far; should shrink from no problem when the time seems ripe for an attack upon it; and should not hesitate to press investigation and ascertain the laws of even the most recondite problems of life and mind.

Among the papers read before this section were the following: "On the Action of a Planet upon Small Bodies passing near the Planet with Special Reference to the Action of Jupiter on such Small Bodies," by Hubert A. Newton, of Yale College; "The Absorption of Heat by the Solar Atmosphere," by W. E. Wilson; "The Ultra-violet Lines of Solar Prominences," by George E. Hale, of Chicago; "Researches Relative to the Second Law of Thermo-Dynamics," by G. H. Bryan and J. Larmar; "Researches on the Surface Tension of Ether at Different Temperatures," by Prof. Ramsay; "Probable Nature of the Bright Streaks on the Moon," by R. Copeland; "The Causes of Variation of Clark Standard Cells," by J. Swinburne; "A New Form of Polarizer," and "Some Points Connected with Measurement of Lenses," by S. P. Thompson; "On the Periodic Time of Tuning-Forks maintained in Vibration Electrically," by J. Viriamu Jones and T. Harrison; "Magnetic Experiments made in Connection with the Determination of the Rate of Propagation of Magnetization in Iron," by F. T. Trouton; and "The Connection between the Crystal Form and the Chemical Composition of Bodies," by W. Barlow. Besides the foregoing, reports of various committees were read and discussed, including one "On Electric Standards"; also, in joint session with the section on Mechanical Science, the

report of the committee on "Units and their Nomenclature" was discussed.

B. *Chemical Science*.—This section was presided over by Prof. W. C. Roberts-Austen, chemist and assayer to the Royal Mint, who discussed the relation between theory and practice in metallurgy, with special reference to the indebtedness of the practical man to the scientific investigator. This subject was treated from three standpoints, namely: 1. Certain facts connected with "oxidation" and "reduction," upon which depend operations of special importance to the metallurgist. 2. The influence in metallurgical practice of reactions which are either limited or reversible. 3. The means by which progress in the metallurgic art may be effected, and the special need for studying the molecular constitution of metals and alloys.

These were discussed quite elaborately, and, in closing, the great importance was indicated of extending the use of the less known metals. Attention is at present concentrated on the production of aluminium, and reference has already been made to the various processes now used. Incidental reference should be made to the growing importance of sodium not only in cheapening the production of aluminium, but as a powerful weapon of research. In 1849, when John Percy was president of this section, magnesium was a curiosity; now its production constitutes a considerable industry.

We may confidently expect [he said] to see barium and calcium produced on a large scale as soon as their utility has been demonstrated by research. Minerals containing molybdenum are not rare; and the metal could probably be produced as cheaply as tin if a use were to be found for it. The quantities of vanadium and thallium which are available are also far from inconsiderable; but we as yet know little of the action of any of these metals when alloyed with others which are in daily use. The field for investigation is vast indeed, for it must be remembered that valuable qualities may be conferred on a mass of metal by a very small quantity of another element. The useful qualities imparted to platinum by iridium are well known. A small quantity of tellurium obliterates the crystalline structure of bismuth; but we have lost an ancient art which enabled brittle antimony to be cast into useful vessels. Two-tenths per cent. of zirconium increases the strength of gold enormously, while the same amount of bismuth reduces the tenacity to a very low point. Chromium, cobalt, tungsten, titanium, cadmium, zirconium, and lithium are already well known in the arts, and the valuable properties which metallic chromium and tungsten confer upon steel are beginning to be generally recognized; but as isolated metals we know but little of them. Is the development of the rarer metals to be left to other countries? Means for the prosecution of research are forthcoming, and a rich reward awaits the labors of chemists who could bring themselves to divert their attention, for even a brief period, from the investigation of organic compounds, in order to raise alloys from the obscurity in which they are at present left.

The report of the Committee, consisting of W. C. Roberts-Austen, Sir Frederick Abel, John W. Langley, William A. Tilden, Edward Riley, John Spiller, G. J. Shelves, and Thomas Turner, on the Establishment of an International Standard of Analysis for Iron and Steel was considered. Last year it was hoped that the final report would be presented at this meeting, but the completion of the work has been deferred. The fifth standard has not been prepared, owing to the

difficulty experienced in obtaining so large a quantity of mild steel of perfectly uniform composition. Prof. Langley stated that it was impossible to make crucible steel sufficiently low in carbon in the plumbago crucibles of the United States. The matter was under consideration, and it was hoped the standard would be completed shortly. The report of the Committee on the Action of Light upon Dyed Colors was then considered. The primary object of this committee is to determine accurately the relative fastness to light of all the various colors at present employed by the dyer of textile fabrics. The work will necessarily proceed very slowly, and will extend over some years. During the past year the work of purifying and dyeing with red coloring matters has been begun and is now in progress.

The following-named papers were presented before the section: "Certain Pyrometric Measurements and Methods of recording them," by W. C. Roberts-Austen; "The Existence of a Compound in Alloys of Gold and Tin," by A. P. Laurie; "The Relation between the Composition of a Double Salt and the Composition and Temperature of the Liquid in which it is formed," by F. W. Humphrey; "Some Experiments on the Molecular Refraction of Dissolved Electrolytes," by J. H. Gladstone; "A Simple Apparatus for Storing Dry Gases," by W. Symons; "An Apparatus for Testing the Sensitiveness of Safety Lamps as Indicators of Fire-damp and Inflammable Vapors," by F. Clowes; "A New Method for the Disposal of Sewage," by C. G. Moor; "The Action of Nitrosyl Chloride on Unsaturated Carbon Compounds," by J. J. Sudborough; "Formation of Peaty Coloring Matters in Sewage by the Action of Micro-organisms," by W. E. Adeney; "The Reaction of Glycerides with Alcoholic Potash," by A. H. Allen; and "Note on Electrolysis of Alloys," by H. C. Jenkins. Several reports of various committees were read and discussed, among which those mentioned previously are important.

C. *Geology*.—The president of this section was Prof. T. Rupert Jones, who delivered an address consisting of an elaborate and compendious summary, methodically arranged, of facts, figures, estimates, and opinions relating to coal. He mentioned the books in which the history of coal is treated of, described the coal field of South Wales, the origin of coal, the area of the coal growth, the varieties of coal, the constituents of the coal measures and of coal, and the extent of the coal measures under the south of England. His closing remarks were:

Light, heat, motion, fragrance, and color are all now obtainable from coal. What more could the sun himself do for us? It is as if the sunshine that cherished the luxuriant jungles of the past had been preserved in the coaly mass of the buried trees. Indeed, the light and heat of former days, expended in thus converting carbonic acid and water into coal, are here stored up for man. By converting coal into carbonic acid and water he can again evolve that heat and light, and use them in a thousand ways beneficial to his race—nay, essential to his very existence as a civilized being. Nevertheless, a great deal has yet to be learned about the natural history of the coal measures, the order and extent of the special kinds of their animals and plants, the time occupied in formation, and the geographical and hydrographical conditions. At all events, we know that all their strata have been

arranged in order, have been buried under circumstances favorable to production of the various coaly fuels, and then turned up in orderly disorder, ready to the hand of man, and well adapted for his use in this passage stage of his civilization and development, helping him, when intelligent, active, careful, and persevering, to higher ends.

The following-named papers were read before the section: "The Discovery of the Olenellus Zone in the Northwest Highlands," and "Some Recent Work of the Geological Survey on the Archean Gneiss of the Northwest Highlands," by Archibald Geikie; "On the Cause of Monoclinial Flexure," by A. J. Jukes-Brown; "On the Continuity of the Kellaways Beds over Extended Areas near Bedford," by A. C. G. Cameron; "On *Colobodus*, a Mesozoic Fish," by Montague Brown; "On the Discovery of the Southeastern Coal Field," by Boyd Dawkins; "The Cause of an Ice Age," by Robert Ball; "Recent Discoveries on the Relation of the Glacial Period in North America to the Antiquity of Man," and "On Recent Discoveries (human images) in the Pleistocene Lava Beds of California and Idaho," by George F. Wright, of Oberlin College; "On Glacial Action in Pembrokeshire," by H. Hicks; and "The Occurrence of *Pachytheca Sphærica* and *Nematophycus* in the Wenlock Beds at Tymawr Quarry, Rumney," by John Storrie.

D. *Biology*.—Francis Darwin, of Christ's College, Cambridge, presided over this section. His address was as follows:

A seedling plant in a state of nature grows straight up, while its main root goes straight down. When it is artificially displaced, both root and stem execute certain curvatures by which they reach the vertical once more. Such curvatures, whether executed in relation to light, gravitation, or other influences, may be grouped together as growth curvatures. I shall principally deal with geotropic curvatures, or those executed in relation to gravitation, but the phenomena in question form a natural group, and it will be necessary to refer to heliotropism, and, indeed, to other growth curvatures. The history of the subject divides into two branches, which will be considered separately. When a displaced apogeotropic organ curves so as to become once more vertical, two questions arise, which may be expressed thus: 1. How does the plant recognize the vertical line? how does it know where the center of the earth is? 2. In what way are the curvatures which bring it into the vertical line executed? The first is a question of irritability; the second, of the mechanism of movement. Sachs has pointed out that these two questions have been confused. They should be kept as distinct as the questions, How, by what nervous apparatus, does an animal perceive changes in the external world? and How, by what muscular machinery, does it move in relation to such changes?

He dealt separately with "irritability" and "mechanism," and then treated of "circumnutation," expressing his continued belief in the views put forward in the "Power of Movement in Plants," that circumnutation is a widely spread phenomenon, even though it may not be so widely spread as he and his father had supposed. In conclusion he said:

The relation between rectipetality and circumnutation may be exemplified by an illustration. A skillful bicycle rider runs very straight; the deviations from the desired course are small; whereas a beginner deviates much. But the deviations are of the same nature; both are symptoms of the regulating power of the rider. We may carry the anal-

ogy further: just as growth curvature is the continuance or exaggeration of a nutation in a definite direction, so when the rider curves in his course he does so by willful exaggeration of a "wobble." It may be said that circumnutation is here reduced to the rank of an accidental deviation from a right line. But this does not seem necessarily the case. A bicycle can not be ridden at all, unless it can "wobble." In the same way it is possible that some degree of circumnutation is correlated with growth in the manner suggested above, owing to the need of regular pauses in growth. Rectipetality would thus be a power by which irregularities, inherent in growth, are reduced to order and made subservient to rectilinear growth. Circumnutation would be the outward and visible sign of the process.

Among the papers presented before this section the following may be mentioned: "Description of an Apparatus for the Cultivation of Small Organisms in Hanging Drops under the Microscope," by Marshall Ward; "Non-sexual Formation of Spores in the Desmidiæ," by A. W. Bennett; "Investigations on the Natural History of the Friendly Islands," by J. J. Lister; "Hybrid Ferns and Crossed Varieties," by E. J. Lowe; "Floating Leaves," by L. C. Miall; and "The Artificial Production of Rhythm in Plants," by Francis Darwin and Dorothea F. M. Pertz.

E. *Geography*.—The president of this section was E. G. Ravenstein, who spoke on the "Field of Geography." He first described the development of cartography, which he illustrated by an interesting collection of maps, and afterward passed to the influence of geographical features upon the destinies of the human race, and the changes effected by man's conquests over nature. These larger considerations, he contended, came legitimately within the "field of geography," as well as the mapping and description of the earth's surface. He said:

Perhaps one of the most instructive illustrations of the complex human agencies which tend to modify the relative importance of geographical conditions is presented to us by the Mediterranean. The time when this inland sea was the center of civilization and of the world's commerce, while the shores of western Europe were only occasionally visited by venturesome navigators or conquering Roman hosts, does not lie so very far behind us. England at that period turned her face toward Continental Europe, of which it was a mere dependency. The prosperity of the Mediterranean countries survived far into the middle ages, and Italy at one time enjoyed the enviable position of being the great distributor of the products of the East, which found their way across the Alps into Germany, and through the gates of Gibraltar to the exterior ocean. But a change was brought about, partly through the closing of the old Oriental trade routes consequent upon the conquests of the Turks, partly through the discovery of a New World and of a maritime highway to India. When Columbus returned from the West Indies in 1493, and Vasco da Gama brought the first cargo of spices from India, in 1499, the star of Italy began to fade. And while the spices of the Indies and the gold of Guinea poured wealth into the lap of Portugal, and Spain grew opulent on the silver mines of Mexico and Peru, Venice was vainly beseeching the Sultan to reopen the old trade route through the Red Sea. The dominion of the sea had passed from Italy to Spain and Portugal, and later to the Dutch and English. But mark how the great geographical discoveries of that age affected the relative geographical position of England. England no longer lay on the skirts of the habitable world; it had become its very center. And this natural advantage was enhanced by the colo-

nial policies of Spain and Portugal, who exhausted their strength in a task far beyond their powers, took possession of tropical countries only, and abandoned to England the less attractive, but in reality far more valuable, regions of North America. England was thus enabled to become the founder of real colonies, the mother of nations, and her language, customs, and political institutions found a home in a new world. And now, when the old highway through the Red Sea has been reopened, when the wealth flowing through the Canal of Suez is beginning to revivify the commerce of Italy, England may comfort herself with the thought that in her own colonies, and in the states which have sprung up across the Atlantic, she may find compensation for any possible loss that may accrue to her through geographical advantages being once more allowed to have full play.

Among the papers read before this section, the following are worthy of mention: "The Art of Observing," by John Coles; "Geographical Education," by J. S. Keltie; "The Treeless Character of Prairies," by Miller Christie; "The Homology of Continents," by H. R. Mill; "The Comparative Value of African Lands," by A. S. White; "Suggestions for the Revision and Improvement of Large Scale Maps of the Ordnance Survey," by Henry T. Crook; "Antarctic Exploration," by Delmar Morgan; "Photography applied to Exploration," by John Thompson; "A Journey in the Lake-Ngami Region," by H. D. Buckle; "A Visit to Kilima-Njaro and Lake Chala," by Mrs. French Sheldon; "The Geography of Southwest Africa," by Henry Schlichter; and "The Physical Aspects of the Himalayas and Notices of the Inhabitants," by J. Tanner.

F. Economic Science and Statistics.—This section was presided over by W. Cunningham, who delivered an address on "Nationalism and Cosmopolitanism in Economics," consisting essentially of considerations on present-day problems gathered from the experience of past times. He endeavored to show that nations and national distinctions are not such important elements in actual commercial life as they used to be, and that this gradual change, as it proceeds further and further, will necessitate modifications in current economic doctrine. He said:

Society is too frequently regarded as an aggregate of similar individuals whose actions can all be represented with sufficient accuracy by the Benthamite analysis of motives. Such a conception of society is surely out of date to-day. In the family there is a natural social and economic unit which was of much actual importance before English municipalities arose, and before English national life asserted itself in economic affairs. The family is a natural unit, which is destined to survive even if our national industry and commerce are more and more merged in cosmopolitan and international progress. Economists may complain that they are misunderstood; but a historian may be inclined to insist that, since human nature and institutions change so much, it is most important that our hypotheses regarding them should be stated fully and clearly. Carelessness had been shown by those economists among whom the doctrine of a wages fund grew up. They did not define it as fixed, but they thought and argued about it as though it was fixed, owing to the actual circumstances of their times, which they implicitly assumed. These conditions have passed away, but we need not denounce those who formulated a theory of wages which was, on the whole, applicable to the times in which they lived, because these times have changed, and it is no longer so applicable to ours. If we are to preserve and develop economics on all its sides, both as a formal

science which deals with the relations between economic units of all kinds and as an instrument for investigating actual facts and understanding them better, we must be careful to see that our hypotheses are appropriate to the actual conditions of life, and most anxious in our endeavor to state fully the conditions we assume.

The following were among the more important papers read before this section: "Labor and Capital," by C. H. Perkins; "On the Alleged Differences in the Wages paid to Men and Women for Similar Work," by Sidney Webb; "The Taxation of Inventors," by Louis Edmunds; "Recent Material Progress in Indian Agriculture," by C. L. Tupper; "Indian Railway Communication," by W. Furnivall; "The Data available for determining the Best Limit (Physically) for Hours of Labor," by Dr. Arlidge; "The Cure of Consumption in its Economic Aspects," by G. W. Hambleton; "The Increase of Food and Population," by W. E. Axon; "Le Play's Method of Systematic Observation," by F. Aubertin; and "Recent Changes in the Distribution of Population in England and Wales," by E. Cannon.

G. Mechanical Science.—The address before this section was delivered by T. Forster Brown, who referred to the progress which had been made in connection with locomotive and marine engines in such works as the Severn Tunnel, the Forth and Tay bridges, and the Manchester ship canal. In mining, the progress had been slow, and it was a remarkable fact that, with the exception of pumping, the machinery in use in connection with mining operations in Great Britain had not, in regard to economy, advanced so rapidly as had been the case in our manufactures and marine. This was probably due, in metalliferous mining, to the uncertain nature of the mineral deposits not affording any adequate security to adventurers that the increased cost of adapting improved appliances would be reimbursed; while in coal mining the cheapness of fuel, the large proportion which manual labor bore to the total cost of producing coal, and the necessity for producing large outputs with the simplest appliances, explained in some measure the reluctance with which high-pressure steam compound engines and other modes embracing the most modern and approved types of economizing power had been adopted. In the raising of coal and placing it on board ship there was a vast amount of machinery employed, much of which was now of an obsolete type. When, however, new winnings had been made, or where in old mines it had been found necessary to replace the old machinery by new, the question of efficiency, and at the same time economy, had of late years received serious attention. Electricity had made rapid strides as a motive power, and there was no doubt that, in conjunction with a better type of machinery for the compression of air, it would eventually become the principal agent in underground operations. Many large electrical installations had already been in use for a considerable period; but there must be still great improvement in electric plant before it would be adopted in preference to other machinery now in general use, especially in gaseous mines; and these improvements must embrace a certain means of rendering sparking absolutely harm-

less under all conditions, for this involved not only the increased efficiency of one class of machinery over another, but also the protection of human life. The following were among the papers read before the section: "The London and Paris Telephone," by W. H. Preece; "Recent Progress in the Use of Electric Motors," by G. Forbes; "Electric Lighting in Trains," by J. A. Timmis; "Electric Parcels Exchange System," by A. R. Bennett; and "On a New System of Screw Propulsion with Non-reversible Engines," and "Internal and External Work of Evaporation," by W. Worry Beaumont.

H. *Anthropology*.—The presiding officer of this section was Prof. F. Max Müller. His address began with a retrospect of his connection with the British Association, and he referred to the meeting of 1847, when he was present, and then he took up the history of the development of anthropology subsequent to the formation of the section in 1884. He then discussed the advantages which anthropology has derived from language, and also the disadvantages which have accrued to anthropology from allowing itself too implicitly to be guided by the science of language. Concerning this branch of his subject he said:

I suppose I need say no more to show how indispensable a study of language is to every student of anthropology. If anthropology is to maintain its high position as a real science, its alliance with linguistic studies can not be too close. Its weakest points have always been those where it trusted to the statements of authorities ignorant of language and of the science of language. Its greatest triumphs have been achieved by men who have combined the minute accuracy of the scholar with the comprehensive grasp of the anthropologist, and were thus enabled to use the key of language to unlock the perplexities of savage customs, savage laws and legends and particularly, of savage religions and mythologies. If this alliance between anthropology and philology becomes real, then, and then only, may we hope to see Bunsen's prophecy fulfilled, that anthropology will become the highest branch of that science for which this British Association is instituted.

Again referring to the address delivered in 1847 by Bunsen, he closed with:

Much has been achieved by anthropology to justify these hopes and fulfill the prophecies of my old friend Bunsen. Few men live to see the fulfillment of their own prophecies, but they leave disciples whose duty it is to keep their memory alive, and thus to preserve that vital continuity of human knowledge which alone enables us to see in the advancement of all science the historical evolution of eternal truth.

The following are among the more important papers read before this section: "The Social and Religious Ideas of the Chinese as illustrated by the Ideographic Characters of the Language," by R. K. Douglas; "On Recent Progress in the Analysis of Vowel Sounds," by R. T. Lloyd; "Family Life of the Haidas (Queen Charlotte Islands)," by C. Harrison; "The Barbaric Element in Ancient Greece and Italy," by G. Hartwell Jones; "The Worship of Meteorites," by Hubert A. Newton, of Yale University; "Comparison of Ancient Welsh Customs, Devices, and Commerce with those of Contemporary Nations," by J. S. Phené; "The First Salt-sea Wanderings of the English Race," by W. M. Adams; "East Central African Customs," by James Macdonald; "Points of Contact between Old

World Myths and the Customs of the Navajo Myth called the 'Mountain Chant,' by Miss A. W. Buckland; "The Formation of a Record of Prehistoric Remains in Glamorganshire," by Edwin Seward; "Anthropometry applied to the Purpose of Personal Identification," by J. G. Garson; "Instinctive Criminality: its True Character and Rational Treatment," by S. A. K. Stranahan; "Recent Hittite Discoveries," by J. S. Phené; "The Similkameen Indians of British Columbia," by Mrs. S. S. Allison; "On the Pottery made and used by the Nicobar Indians," by E. H. Man; and "Notes on the History and Ethnology of Welsh Fairies," by Leyson Rhys. It is interesting to add that the president, Prof. Müller, said he felt it his duty to express the gratitude of every anthropologist to Major John W. Powell for the work he had done during the last ten years. As director of the United States Ethnological Bureau he had contributed many useful works on anthropological subjects. The work of the bureau reflected the highest credit not only upon Major Powell, but upon the Government of the United States, who were doing their utmost to preserve records of an ancient world which were dying out before their eyes. He wished he could impress upon the Colonial Office of her Majesty's Government the necessity of taking similar action. He succeeded some years ago in persuading Earl Granville to encourage the publication of colonial records. There was no country which might be in possession of such useful information in regard to the early days of mankind as England, but it seemed to be impossible to impress upon the Government their responsibility in this matter. There was an old world disappearing before their very eyes, and the time would come when the present generation would be held responsible for not collecting information which was within their reach. If in the time of Cicero and Caesar somebody had written down the Etruscan language, what an immense amount of time and labor might have been saved.

Final Sessions.—The last meeting of the General Committee was held on Aug. 25, when the report of the Committee of Recommendations was received. It was then announced that the total number of tickets issued was 1,488, realizing a sum of £1,664. Grants of money, amounting in all to £1,013, were appropriated to scientific purposes by the General Committee at the Cardiff meeting, August, 1891, and the announcement of the specific amounts was made. The concluding general session of the association followed, when resolutions of thanks to the Mayor of Cardiff, the executive committees, and to the local secretaries and treasurers were adopted and acknowledged. Subsequently the association adjourned to meet in Edinburgh on Aug. 3, 1892, under the presidency of Sir Archibald Geikie, the eminent geologist. The Lord Provost of Edinburgh, the Marquis of Lothian, the Earl of Rosebery, Lord Kingsburgh, Sir William Muir, Prof. Sir Douglas MacLagan, Sir William Turner, Prof. P. Guthrie Tait, and Prof. Alexander Crum Brown were elected vice-presidents for the Edinburgh meeting. Prof. G. F. Armstrong, F. Grant Ogilvie, and John Harrison were elected local secretaries for the meeting at Edinburgh, and A. Gillies Smith, local treasurer. The mayor and

town authorities extended an invitation to the association to meet in Nottingham in 1893.

Popular Features.—On the evening of Aug. 20 a *conversazione* was given in Park Hall, at which the Marquis of Bute, as the chairman of the local committee, and the Marchioness of Bute received the members. As usual, there were several discourses delivered to the association. On Aug. 21 Louis C. Miall lectured on "Some Difficulties in the Life of Aquatic Insects"; on Aug. 24 Arthur Rücker spoke on "Electric Stress"; and on Aug. 25 Sylvanus P. Thompson delivered an address on "Electricity in Mining." Twenty excursions were arranged for, twelve of which were planned for Aug. 22 and eight for Aug. 27, at the close of the meeting. Several receptions were tendered to the members by residents of Cardiff, and in general interest the meeting was fully up to the average gathering of the association.

Australian.—The third meeting of this association was held in Christchurch, New Zealand, during the week beginning with Jan. 15, 1891. The officers of the meeting were: President, Sir James Hector. Vice-presidents: Sir R. G. C. Hamilton, A. Lebius, W. C. Kernot, W. Saville Kent, and Thomas Blackburn. General Treasurer, Henry C. Russell. Permanent Secretary, Archibald Liversidge. Presidents of the Sections: A, Mathematics, Physics, and Mechanics, T. R. Lyle; B, Chemistry and Mineralogy, Orme Masson; C, Geology and Palæontology, Reginald A. F. Murray; D, Biology, W. A. Haswell; E, Geography, G. S. Griffiths; F, Economic and Social Science and Statistics, G. W. Cotton; G, Anthropology, Alfred W. Howitt; H, Sanitary Science and Hygiene, Allan Campbell; I, Literature and Fine Arts, R. H. Roe; J, Architecture and Engineering, John Sulman.

Meetings.—The different sections met in rooms in Canterbury College that were placed at their disposal by the college authorities. The first general meeting was held in the old Provincial Council Chamber on the evening of Jan. 15, when Baron Ferdinand von Mueller resigned the chair to Sir James Hector, the director of the New Zealand Geological Survey, who delivered an inaugural address on assuming the presidency of the association. On the following morning the different sections met, and their presiding officers delivered addresses, as follow: C, "The Past and Future of Mining in Victoria," by Robert A. Murray; D, "Recent Biological Theories," by W. A. Haswell; E, "Antarctic Exploration," by G. S. Griffiths; F, "A State Bank of Issue," by G. W. Cotton; G, "Ceremonies of Initiation in Australian Tribes," by A. W. Howitt; H, "The Advancement of Sanitation among the People," by Allan Campbell; I, "Literature in Education," by R. H. Roe, and J, "The Architecture of Towns," by John Sulman. The sections continued to meet until Jan. 21, and during the mean while 74 papers were read and discussed.

Reports.—A revised code of laws was adopted for confirmation at the next meeting. Ten research committees were appointed to report on different subjects to the next meeting, and a grant of £25 was made toward measuring the rate of motion of the New Zealand glaciers. As great inconvenience is often felt from the want of a

special name for the sea between New Zealand and Australia, a recommendation was adopted that the Lords of the Admiralty be requested to name this sea the Tasman Sea. The committee also recommended the appointment, by the British and American associations, of a conjoint committee to define the terms of general importance in biology; and that Little Barrier Island, north of New Zealand, and Resolution Island, in Dusky Sound, be set apart as reserves, where the native fauna and flora of New Zealand may be preserved from destruction.

Entertainments.—Three evening lectures were given before the association, as follow: On Jan. 16, "The Glaciers of the Tasman Valley," by G. E. Mannering; on Jan. 19, "Oysters and Oyster Culture in Australasia," by W. Saville Kent, Queensland Commissioner of Fisheries; and on Jan. 20, "A Short History of Vocal Music," by G. F. Tendall. Garden parties were given by Sir James Hector, Leonard Harper, and the Bishop of Christchurch; while, on Jan. 22, Spohr's oratorio of the "Last Judgment" was given in the cathedral by its choir.

Excursions. During the meeting, were made, on Jan. 19, to the Christchurch drainage works; on Jan. 20, to the Addington workshops; on Jan. 21, to Kaiapoi woolen factory and Belfast freezing works; and on Jan. 22, to the Lincoln Agricultural College. After the meeting, excursions were made on Jan. 24, from Palmerston South to the mouth of the Shag river; on Jan. 26, from Napier to Kuapehu and Tongariro; and on Jan. 28, from Port Chalmers to the West Coast Sounds.

The meeting was considered a successful one, and the attendance was about 470. Among the visitors was Prof. George L. Goodale, past president of the American Association for the Advancement of Science, who went to the meeting as the official representative of the sister association in the United States.

Next Meeting.—The next meeting will be held at Hobart, Tasmania, with Sir Robert Hamilton, Governor of the colony, as president.

French.—The twentieth annual meeting of the French Association for the Advancement of Science was held in Marseilles during the week beginning Sept. 17. The president was P. P. Dehérain, a member of the scientific section of the French Institute, who delivered an address "On the Relations of Chemistry and Physiology to Agriculture." The opening session was held on the afternoon of Sept. 17, when M. Baret, the Mayor of Marseilles, welcomed the gathering in a short address, in which he spoke of the honor that his city felt in receiving the distinguished scientists; and, after referring to the history of Marseilles—a city of 400,000 inhabitants, and one that had been in existence for more than twenty-five centuries—he told of what it had done to advance the cause of science, citing the various industries and technical works which would be opened for inspection during the meeting of the association.

President's Address.—After referring to the different places at which the association had met in previous years, and especially to the meeting of 1890, when the unveiling of the statue of Gay Lussac, in Limoges, was deferred until the arrival of the association, he an-

nounced that, in accordance with the custom of his predecessors, who chose as the subject of their addresses a discussion of that branch of science with which they were most familiar, so he would attempt to discuss the progress of agriculture as affected by recent discoveries in chemistry and physiology. At the close of the last century the crudeness of the methods of chemical analysis were such that it was impossible to arrive at a positive knowledge of the composition of plants. It was De Saussure who, in 1804, wrote: "I have found phosphate of lime in the ashes of all the plants that I have examined, and hence assume it to be a constant constituent of all vegetable life." This naturally led to the artificial application of chemicals to the soil to replace those taken up by the plant. The first of these appears to have been bone ash, and it was not until 1843 that the Duke of Bedford demonstrated the real cause of its efficiency. Liebig's experiments, tending to show that by treating bones with sulphuric acid they became changed into superphosphates, was a distinct advance in the knowledge of the subject. The discoveries of phosphate rock and the great work in England at Rothamsted brings us down to modern times. Thus, by analyzing the ash of plants, chemistry has shown what ingredients are necessary to restore the soil to its normal composition. The condition of nitrogen in the soil and its influence upon vegetation was next taken up. The able researches of George Ville, in France, followed by those in England of Lawes and Gilbert, were referred to, and finally the more recent work by Berthelot was mentioned. In other ways chemistry had rendered great service to agriculture. The terrible disease that threatened to exterminate the vines of France was discussed, and how one means after another was suggested by chemists, until carbon disulphide, proposed by Thenard, and the sulpho-carbonates recommended by Dumas proved efficacious. He closed with a brilliant description of the agricultural resources of France, and especially those of the section of France of which Marseilles was the chief city.

Treasurer's Report.—The total receipts during the year, as reported by Emile Galante, were \$19,611, and the total expenditures were \$18,325, of which sum \$2,160 were grants made to various scientists engaged in original researches. By various amounts the capital of the association had been increased, until it had now reached the sum of \$170,430. He also announced that the council were studying means by which this twentieth meeting might be made memorable by reducing the annual dues required of members. In 1872 the capital of the association amounted to only \$20,000, but now, thanks to the skillful care of its officers, it had reached the sum of \$170,000, and in the mean while the sum of \$45,000 had been distributed.

Excursions and Entertainments.—Two evening lectures were given, one on Sept. 18 and the other on Sept. 21. A reception was held at the Hotel de Ville on the evening of Sept. 17. The afternoons were largely devoted to visiting scientific and industrial works. Excursions were made to Arles and to Aix during the meeting, and at its close two days were spent in an extensive trip along the Mediterranean coast.

ASTRONOMY, PROGRESS OF, IN 1891.

Although considerable advance has been made since the close of the preceding report, it can not be claimed that the present year has been characterized by important discoveries, such as rewarded the labors of astronomers during 1890.

The Sun.—This year ushers in the beginning of another sun-spot maximum period, which appears to be too early, reckoning from the date of its last occurrence, which was nearly three years too late, to accord with the received interim of about eleven years from maximum to maximum. Thus far during 1891 there has been hardly a day on which spots and extensive fields of faculae have not been observed.

On June 17, at 10^h 16^m, Paris mean time, M. Trouvelot, an assistant at the Meudon Observatory, near Paris, saw a luminous outburst on the sun of apparently the same character, he says, as that seen by Carrington and Hodgson on Sept. 1, 1859. The spot was of a yellowish color and near the western limb of the sun. Soon afterward another manifested itself a little to the north, from both of which what appeared to be volcanic bombs were projected. The same phenomena were observed the next day, though with less activity, and ceased to be noticeable soon after noon. These seem not to have been noticed elsewhere.

In No. 85 of the Johns Hopkins University Circular, Prof. Henry A. Rowland enumerates the following elements as certainly existing in the sun by comparison with the solar spectrum from the extreme violet down to D: Calcium, iron, hydrogen, sodium, nickel, magnesium, cobalt, silicon, aluminum, titanium, chromium, manganese, strontium, vanadium, barium, carbon, scandium, yttrium, zirconium, molybdenum, lanthanum, niobium, palladium, neodymium, copper, zinc, cadmium, cerium, glucinium, germanium, rhodium, silver, tin, lead, erbium, potassium.

The doubtful elements are: Iridium, osmium, platinum, ruthenium, tantalum, thorium, tungsten, and uranium.

Those not found in the solar spectrum are: Antimony, arsenic, bismuth, boron, nitrogen, caesium, gold, iridium, mercury, phosphorus, rubidium, selenium, sulphur, thallium, and praseodymium. Strangely enough, oxygen, which constitutes one half the earth, is not found in any one of the three lists.

Transit of Mercury.—The transit of Mercury, May 9, 1891, occurred, on this continent, save for the observatories on the Pacific coast, when the sun was too low to be well observed. Even in that locality the sun had set before the third and fourth contacts took place. At the Lick Observatory, Prof. E. E. Barnard observed the first two contacts as follow: Mt. Hamilton mean time, first contact, 3^h 46^m 32^s.7. Second contact, 3^h 51^m 19^s.9. Though carefully looked for, no trace of the planet could be detected before first contact, nor was that portion of the planet outside of the sun's disk between the two contacts visible. The luminous ring encircling the planet, which some observers claim to have seen both during this and the preceding transit, was not seen. This aureola, as it is called, was, at the last transit, clearly observed at at least two stations in India, while at another point in that country it was not visible even to eager search-

ers. At Madras the halo could not be seen, though the central white spot, observed at several previous transits, was plainly seen by the late Prof. Pogson and an assistant.

That mysterious phenomenon, the "Black Drop," usually seen at transits of Venus, also was generally visible. It appears as a black ligament connecting at ingress and egress the limbs of the planet and the sun, growing narrower and narrower as the planet progresses; when the rupture occurs, especially at ingress, the planet is found to have advanced considerably, which renders it impossible to determine accurately the precise instant of contact. As to the cause of these appearances astronomers are not agreed.

Transits of Mercury will, for ages, occur in the months of November and May, the next falling due Nov. 10, 1894.

Prof. Simon Newcomb, who has reviewed the transit of Venus observations of the years 1761 and 1769, from which Encke deduced a parallax of 8.571" and the earth's distance from the sun to be about 95½ million miles, computes the parallax to be 8.79", which agrees almost exactly with that obtained from the transits of 1874 and 1882, and makes the sun's distance in round numbers 92,500,000 miles.

Spectrum Analysis.—Spectrum analysis, as applied to astronomical investigation and the interpretation of the solar, astral, and nebular lines, is still the absorbing theme among astronomers, and through the labors of such investigators as Huggins, Vogel, Rowland, Pickering, Young, De la Rue, Draper, Janssen, Langley, Keeler, and scores of others equally well known, it has become a distinct branch of science. Many observatories have separate appliances for the prosecution of this work, and the discovery of the gelatin dry plate has lent invaluable aid by making possible the photographing of their spectra, and thus securing an imperishable record for future comparison.

As we have seen, the spectroscope has shown that terrestrial matter is not confined to the earth, but exists also in the sun and in every visible star as well as in comets and the nebulae.

The task of analyzing the stars and nebulae, says Prof. Huggins, "is one of great difficulty when we have to deal with spectra differing from the solar type. We are thrown back upon the laboratory for the information necessary to enable us to interpret the indications of the spectroscope as to the chemical nature, the density and pressure, and the temperature of the celestial spaces."

The Nebular Line.—The vexed question, whether the principal nebular line is coincident with the magnesium fluting, which has so agitated the spectroscopists has been, it would seem, settled by both Dr. Huggins and Prof. Keeler. The latter fixes with great accuracy the position of the former, and makes it 0.43 tenth metre more refrangible than the lower edge of the magnesium fluting. The nebular line, he declares, has no resemblance to a fluting. Flutings and lines of magnesium, which could not fail to appear with the fluting at wave length 5006.38, are entirely absent in nebular spectra. His conclusion that the principal nebular line is not coincident with the magnesium fluting must be regarded as conclusive. And this proof does

not rest on observations of one nebula only, but of several, and with a dispersion often equivalent to that of 24 prisms of 60°, as the fourth spectrum of a Rowland grating of 14438 lines to the inch was often employed. The whole matter turns on an almost inappreciable difference of the wave lengths of the two, that of the nebular line being 5005.68 tenth metres and that of the magnesium fluting 5006.13. The amount of displacement of the lines being very small, it is barely possible that it is due to the relative motion of the earth toward the apex of the sun's way, or of the nebulae in the line of sight, or to both causes. The conclusion arrived at by Dr. and Mrs. Huggins and Profs. Lieving, Dewar, and Keeler effectually consigns to oblivion the celebrated meteoric theory of Lockyer.

Celestial Photography.—The following quotation from Prof. E. E. Barnard, of the Lick Observatory, California, whose fine photographs have attracted wide attention, will be instructive to those who wish to photograph celestial objects with a telescope: "The actinic image is totally invisible on the ground glass, and we have to grope for it, as it were. Its position can easily be found by experiment. A suitable attachment is made to carry the ground glass and plate holder; this takes the place of the eyepiece, and is supposed to be adjusted for changing the focus. If the telescope is adjusted to a star and allowed to remain stationary, the star will pass across the field of view by the rotation of the earth. Focus the image carefully on the ground glass. It should appear as a tiny point of light. Record this position of the tube. Substitute now the sensitive plate, and adjust the instrument so that the star shall cross the field; give an exposure of, say, half a minute, the telescope remaining stationary. Draw the tube out now about 0.05 of an inch, and repeat the exposure; continue this for a number of times, taking care after each exposure to shift the telescope in altitude, so that successive trials shall not fall on each other. When the plate is developed it will contain a series of lines or trails produced by the light of the star as it crossed the plate. Some of these will be blurred, but it will be seen that they successively become sharper until one is found that is perfectly sharp, i. e., if the experiment has been carried far enough. This will have been made at the chemical focus. The record for this trail, compared with the reading when the image was in focus on the ground glass, will be the correction to the visual to obtain the chemical focus. Hence, when a photograph is to be made, the image is sharply focused on the ground glass, the telescope is then adjusted to the chemical focus, and the resulting picture should be sharp. I have thus experimented with four different telescopes, and found that they all gave very satisfactory photographs at the chemical focus." Prof. Barnard found the chemical focus of each of the four telescopes to be *outside* of the visual, 0.17, 0.10, 0.12, and 0.24 of an inch respectively. The last three were telescopes of the Lick Observatory.

The task of photographing the planets is one of great difficulty, inasmuch as the faintness of their light does not admit of instantaneous exposures, as is the case in photographing the sun, moon, and the brightest stars. Besides, the

rapid rotation of Jupiter and Saturn on their axes prevents prolonged exposures. So great is this latter hindrance that as yet no photographs of these two great planets have been secured that equal the delineations made by skilled draughtsmen. In photographing the nebulae, however, the exposures may last for hours if desired, and, in extent and depth of structural detail, the photographs far eclipse all visual revelations even when assisted by mammoth telescopes.

All attempts to photograph the solar corona without an eclipse have thus far been futile, as the sky luminosity so fogs the negative plates as to obliterate every coronal imprint. Commenting on this matter, Mr. Burnham, in his "Cayenne Eclipse Report," says: "Those who have given long exposures, or advocated doing so, with the object of getting the greatest possible extension of corona on the plate, must have overlooked the fact that the background of the sky is luminous, and would soon fog a sensitive plate if all other light were excluded. The problem, photographically considered, has nothing to do with the matter of photographing a nebula on the black ground of the sky at night. There the only light which reaches the plate comes from the object to be photographed, and the exposure can be indefinitely prolonged, with the result of constantly increasing the impression made by the fainter nebulous light. Undoubtedly the coronal light would act on the plate in the same manner if all other light could be excluded, and we should have a picture in extent and detail far beyond the most wonderful display ever seen with the naked eye."

It is the opinion of physicists that, above our atmosphere, the sky by day, even in the neighborhood of the sun, would be intensely black, under which conditions the corona could be photographed as well as the brightest nebula by night. Were it possible to attain to this, it is highly probable that during a total solar eclipse a single photographic expert would give more instruction than the combined results of a large and expensive expedition. But no such condition can ever be realized at ordinary heights, though an appreciable step toward it may be reached by working from elevations of 15,000 or 20,000 feet above the sea. In pursuance of this idea, M. Janssen has proposed the building of an observatory on Mont Blanc, providing rock could be reached at a reasonable depth; but as borings have been made through the ice cap to a depth of thirty feet, and, horizontally, to a distance of ninety feet without finding the desired rocky foundation, the project has been postponed until another season, at least, and, perhaps, permanently abandoned.

Photographic Chart of the Sky.—The last reunion of the International Committee on the photographic chart of the entire sky was recently held. Of the eighteen observatories assigned to the task, all are ready, and some have already secured a number of satisfactory trial plates. Many delicate and difficult questions arose, which can not be discussed here, most of which, it is hoped, have been solved, though doubtless others will present themselves as the work progresses. About three years have been occupied in constructing the photographic telescopes, in organizing, and in settling many pre-

liminaries made necessary by want of experience. The conference demands a great photographic chart of the heavens with exposures of forty minutes, with which it is expected to reach stars down to the fourteenth magnitude; and, as each plate is to be limited to four square degrees, and, as each star, to avoid errors, is to appear on two plates, over 22,055 photographs will be required. Besides the plates requisite for the great chart, a second set to form a catalogue is to be made, with shorter exposures, and to include stars only to the eleventh magnitude. The plates are to be prepared by photographing upon them very faint, delicate lines, called by the French *reseaux*, five millimetres apart, which will greatly facilitate the tedious process of measuring and cataloguing several million stars.

The following are the observatories taking part in this work, with the number of plates necessary to complete each zone:

Observatories.	No. of plates.	Observatories.	No. of plates.
Greenwich.....	1,149	Algiers.....	1,260
Rome.....	1,040	San Fernando.....	1,260
Catane.....	1,008	Tacubaya.....	1,260
Helsingfors.....	1,008	Santiago.....	1,260
Potsdam.....	1,232	La Plata.....	1,360
Oxford.....	1,180	Rio de Janeiro.....	1,375
Paris.....	1,260	Cape of Good Hope.....	1,512
Bordeaux.....	1,260	Sydney.....	1,400
Toulouse.....	1,080	Melbourne.....	1,140

In giving a sufficiently long exposure to secure very faint stars, the brighter are overexposed and their images enlarged, though to just what extent is difficult to determine. Again, stars of different colors require longer or shorter time to impress themselves on the gelatin film, and the ever-changing conditions of the atmosphere at different times and stations impose great difficulties, which it seems impossible to obviate.

Variable Stars.—Prof. Seth C. Chandler, an authority on variables, makes the statement that two thousand variable stars are visible with an opera-glass, while hundreds of thousands are revealed by the largest telescopes. Their periods range from 7^h 46^m 48^s, the shortest known, to several years in length. The shortest is known as S. Antliae, No. 3,407 of Chandler's Catalogue, right ascension A. D. 1900-0, 9^h 27^m 54^s, declination south 28° 12'. A photograph of its spectrum, made at Harvard College Observatory in April, 1890, indicated by the widening of some of the lines and the narrowing of others that it belongs to an intermediate class between variable stars of first and second type.

Spectroscopic Binaries.—The number of double stars now known, many of which are binaries, amounts to several thousand, and the list is constantly being augmented by further discoveries. These are visually double by the aid of the telescope, though some are so close as to suffer only a slight elongation under the highest powers our greatest telescopes will bear. It is not these we wish to consider, but a new class of binaries, which, while known to be such, are not thus seen even in the most powerful telescopes. They are called spectroscopic binaries, and number only about a dozen, including a few suspects; but in the near future, because of the increase in the number and efficiency of spectroscopes in the hands of zealous astronomers, this roll must be greatly extended.

Dr. Vogel has examined early photographs

taken at Potsdam of the spectra of Beta Auriga and of Zeta Urse Majoris, and, in the case of the former, finds the doubling of the lines well marked on many of those taken from Nov. 14, 1888, onward. No particular attention was paid to this fact at the time, and hence one of the greatest discoveries of modern times was then missed.

Change in the Motion of Sirius.—For several years the motion of this star (the Dog Star) has been one of recession, at one epoch it having been at the rate of 20 miles a second, but lately it has changed to one of approach, with a speed, according to Prof. Vogel, of nearly two miles a second, the spectra of iron and of hydrogen giving 1.96 and 1.73 mile respectively. The reversal of its motion is doubtless due, it being a binary double, to a change in its orbital motion. As it revolves around the center of gravity of the system, its direction of motion will always be changing. Besides its orbital motion, it has also one of translation through space.

The companion of this star, which for many years has been visible in telescopes of medium size, is now beyond the capacity of even the Lick telescope, with a power of 3,300. Heretofore Mr. Burnham has expressed the opinion that he would be able to follow it during its peri-astral passage, but he now thinks that it will not be again seen for several years. Its present distance is less than 40".

Jupiter's Satellites.—On Sept. 8, 1890, Prof. Barnard observed that the first satellite, while crossing the disk of Jupiter, appeared double. It was thus seen also by Mr. Burnham, the distinguished observer of double stars, and he does not hesitate to say that it appeared as perfectly duplex as any double star he had ever seen. The observation was made with the 12-inch telescope at the Lick Observatory. Its duplicity was viewed with different powers, so that no deception could be ascribed to the eye-pieces employed. The observation was strange and unheard-of, and can not fail soon to be confirmed or disproved. If not double, the only possible explanation of the phenomenon is that the satellite is surrounded by a luminous belt parallel to those of the planet.

Rotation of Mercury and Venus.—The supposed discovery of Schiaparelli, that these planets complete one rotation only while making a revolution round the sun, is not accepted by all astronomers. Apropos to this, MM. Niestenr and Stuyvaert, of the Royal Observatory of Belgium, who have studied Venus for ten years, have concluded that Cassini's period of the rotation of that planet (twenty-three hours) is correct.

Nebulae.—The quest for nebulae is now systematically prosecuted by only five astronomers, viz.: Bigourdan, of France; Denning, of England; Barnard, of the Lick Observatory; Stone, of the Observatory of the University of Virginia; and Swift, of the Warner Observatory. This field of work is not now popular, because large telescopes are required to achieve success, inasmuch as all of Sir William Herschel's Class I and II, and nearly all so faint as his Class III, have been discovered either by him or his successors, predecessors of the present searchers for these bodies. The places and magnitudes, with descriptive remarks of all known down to 1888,

may be found in Dr. Dreyer's New General Catalogue, published by the Royal Astronomical Society of England as Vol. XLIX, Part I, of its "Memoirs."

Prof. Barnard has recently discovered a new Merope nebula in the Pleiades. The old one, found several years ago by Tempel, has, from its supposed variability, been the cause of much discussion among astronomers, many of whom doubted even its existence. While easily seen with glasses as small as 3 inches, it is invisible in large telescopes, which anomaly is explained by the fact that small telescopes, having large fields of view, give the benefit of contrast with a dark sky, which the contracted fields of great instruments do not afford. For this reason the tail of Donati's comet could be followed farther by the naked eye than with the largest telescope. This is true also of the auroral streamers and of the zodiacal light.

Since the publication of his ninth catalogue, Dr. Swift has added 57 to his previous number of newly discovered nebulae.

M. Bigourdan, assistant to the Paris Observatory, calls attention to the supposed variability of the nebula (New General Catalogue, 1186) situated near the variable star Algol. It was discovered by Sir William Herschel in 1785, and in 1831 observed by Sir John Herschel, since which time there is no record of its having been seen until lately, though searched for.

Mr. Burnham has examined the vicinity of Hind's variable nebula in Taurus, and found, with the 36-inch telescope of the Lick Observatory, a very small, condensed nebula surrounding the double star T Tauri. But Mr. Roberts has photographed the region, and the plate showed no nebula, nor nebulous star, nor any nebulosity, though the exposure was three hours long. In this instance photography has increased rather than diminished the mystery attaching to the body. It may be that the nebula is deficient in violet rays, and therefore non-photographable. Are there not two nebulae here, one being Hind's variable, seen by Otto Struve, D'Arrest, Tempel, and others, and the other that seen by Mr. Burnham, as above?

For several years Isaac Roberts has made photographic study of the Andromeda nebula, but the majority of his plates, even as late as October, 1890, do not show any trace of a stellar nucleus, while others secured in November and December represent the nucleus as distinctly stellar. He is therefore of the opinion that the nucleus is variable, though further experiments may be necessary to corroborate this. The sudden appearance and disappearance in 1885 of a star near the center of the nebula lends additional confirmation to the theory of the variability of at least portions of the central part of this interesting nebula, which the spectro-scope declares to be a cluster on a scale of vastness equaling, perhaps surpassing, our Milky Way, the shape of which it greatly resembles.

Meteors.—The Perseid meteors which belong to the meteoric shower of Aug. 10 were this year more numerous than has been observed since 1871. As seen at the Warner Observatory, and at several widely separated places both in this country and in Europe, the number was so great as to attract general attention. Unlike the 14th

of November shower, it returns with unfailing regularity and is prolonged for several days, while all the others last but a few hours. The first meteors were seen at its last return on Aug. 2, and they were observed in greater or less numbers on every morning until Aug. 12. A satisfactory explanation of such a prolongation has never been given. Its radiant is in Perseus, and, instead of being a point, extends, according to observations of the writer, continued through several years, over an elliptical area whose axes are about 10° by 5° . No well-authenticated account of stone falls has been announced.

Meteorites.—A paper on this subject was read at the recent meeting in Washington of the American Association for the Advancement of Science by Prof. A. E. Foot, of Philadelphia. He says that in Crater Mountain, 185 miles north of Tucson, Arizona, he found small meteoric fragments scattered over an area a third of a mile in length by 120 feet in width, extending from northwest to southeast. Exactly in line with it but outside the crater, about 2 miles distant, were two meteoric stones, weighing 154 and 201 pounds respectively, and 181 smaller fragments ranging from one sixteenth of an ounce to 6 pounds 10 ounces. A section of a mass of 40 pounds, of extreme hardness, was exhibited at the meeting, "which revealed cavities containing small, black objects, one fiftieth of an inch in diameter, with which polished corundum was cut as easily as a knife might cut gypsum," and suggested the idea of diamonds. But the published statement that all the geologists present were agreed that they were diamonds is erroneous, and the writer has the assurance of one of our most celebrated meteorologists, who examined them, that they certainly are not those gems.

Comets.—Since Oct. 6, 1890, the date of the last discovery of a comet given in our last volume, the following comets have been discovered, numbered in the order of their finding rather than their perihelion passage: Comet *e*, by Prof. Zona, of Palermo, Italy. These are the computed parabolic elements: Perihelion passage = 1890, July 27-713, Berlin mean time; from node to perihelion = $328^\circ 53'$; longitude of node = $86^\circ 28'$; inclination = $155^\circ 2'$; log. q = 0.314.

Comet *f* 1890 was detected by M. Spitaler at Vienna on Nov. 16. At receipt of the news in Vienna of the discovery of Zona's comet, the day after its finding, Spitaler directed the 27-inch refractor to the indicated place, and saw at once a very faint object in the field, but, as it was much fainter than the telegram asserted, he sought farther, and found the Zona comet. Returning to his first object, he saw that it had moved, and that he had achieved a most extraordinary and entirely unprecedented event in astronomy—viz., the having in almost the same field of the telescope two comets moving in different directions. The following elliptic elements have been computed: Perihelion passage, 1890, Oct. 26-60123, Berlin mean time; longitude of perihelion = $58^\circ 25' 58.2''$; longitude of node = $45^\circ 5' 51.7''$; inclination = $12^\circ 50' 44.5''$; log. of a = 0.537532; period = 6.4 years.

The discoverer has reasons for supposing this to be its first appearance in its present orbit, which, he thinks, was changed into this form by a near approach to Jupiter in the latter part of

1887. Its aphelion distance is smaller than Encke's, or less than that of any known comet.

Comet *a* 1891 was discovered by Prof. E. E. Barnard, at the Lick Observatory, on March 29, and by W. F. Denning, of Bristol, England, on the succeeding night. The annexed parabolic elements have been calculated: Perihelion passage, 1891, April 27-55900, Berlin mean time; node to perihelion = $178^\circ 48' 24.8''$; longitude of node = $193^\circ 55' 36.5''$; inclination = $120^\circ 31' 27''$; log. perihelion distance = 0.599332.

Comet *b* 1891. This is a return of Wolf's periodic of 1884, and was detected on May 1 by Spitaler, and on May 4 by Barnard. On Sept. 4 it passed nearly over the center of the Pleiades, treating astronomers to a sight no human eye had ever seen.

Comet *c* 1891 is an apparition of Encke's comet which has the shortest period of any known = 3.3 years. It was first seen on Aug. 1 by Barnard. The principal interest attaching to it is the progressive diminution of its periodic time, evidencing, as many suppose, the retarding effect of the hypothetical, all-pervading ether. Astronomers are not agreed, however, as to the correctness of this conclusion.

Comet *d* 1891 was discovered, on Sept. 28, by Barnard, in right ascension $20^h 53^m 45^s$, declination south $1^\circ 23'$. This is a return of Swift's periodic comet, discovered in 1880, and adds another to the rapidly increasing list of short-period comets. Though it was previously found by Tempel in 1869, its periodicity was not then predicted or even suspected. Hence, conforming to a rule adopted by astronomers in the case of Winnecke's, Tuttle's, and Biela's comets, all of which had been detected previously by others, this should be called Swift's comet, but it is usually denominated Tempel-Swift. The following elements, which differ but little from those of 1869-'80, have been computed for it, but the comet at discovery was nearly five degrees from its calculated place: Time of perihelion passage, Nov. 14-958, Paris mean time; longitude of perihelion = $43^\circ 14' 15.7''$; longitude of node = $296^\circ 31' 14.8''$; inclination = $5^\circ 23' 13.8''$; logarithm of perihelion distance = 0.036071. Motion direct.

Comet *e* 1891 by Barnard, on Oct. 2, in right ascension $7^h 31^m 24^s$, declination south $27^\circ 54'$. From observations made at the Lick Observatory on Oct. 3, 4, and 5, Prof. Campbell has computed the following elements: Perihelion passage, Nov. 8-75, Greenwich mean time; from node to perihelion = $262^\circ 6'$; longitude of node = $215^\circ 38'$; inclination = $75^\circ 50'$; perihelion distance = 1.0166. It had a rapid motion southeast, and was soon lost to northern observatories.

Catalogues.—The *Astronomische Nachrichten*, No. 3,047, has published a list of 70 new double stars discovered in 1890 by S. W. Burnham, of the Lick Observatory staff, with the 36-inch telescope. It is the seventeenth catalogue of double stars published by him. From their closeness they are very difficult objects, and require the largest telescopes for their examination. Thirty-nine have distances less than 1.0', while the average distance of all is 0.45'. Twenty-five are at a distance of 0.33'. They cover a wide range of magnitudes, the following being naked-eye stars: B. A. C., No. 230, 199 Ceti, 95 Piscium, Chi Persei, 48 Cephei (H), 34 Persei, B. A.

C. 1142, 248 Tauri, 5 Camelopardalis, Nu Geminorum, 36 Geminorum, Tau Herculis, 24 and Psi 1 Aquarii. Seven of the list previously known as doubles were found to be triples. The total number of double stars found by him is 1,224. Regarding the cumbering of our catalogues of double stars with uninteresting pairs, he says: "If my purpose had been to make an imposing catalogue of discoveries by finding as many new pairs as possible without reference to their character, the number in my lists, down to this time, could easily have been made many times larger without exceeding the Struve limits of magnitudes and distance; but at this time there would seem no good reason for incumbering a double-star catalogue with that kind of material. We now know that they can have no interest as double stars in the proper sense of the term. With large telescopes, pairs of 5" or 6" distance in the lower magnitudes of the *Durchmusterung* can be found by the score on any night when the seeing is too poor for ordinary micrometrical work, and with the 12-inch it would be easy to make a large list in a comparatively short time. I have not allowed myself to find new pairs of the kind recorded here any faster than they could be thoroughly measured. It may be many years before some of these are reobserved, and it is desirable to have a careful set of measures at this time with which to compare future measures."

Speaking of the double component of Gamma Andromeda, he says the elongation is doubtful with powers, on the 36-inch, of 1,900 and 3,300, and he thinks the distance much less than 0.1".

Mr. Burnham has, from measures of his own continued from the date of discovery, ascertained that the close companion to Kappa Pegasi makes a revolution round the principal star in the astonishingly short time of a little over eleven years, making it the shortest-period binary visually known. In the monthly notices of the Royal Astronomical Society for March, 1891, is given a diagram of its orbit. He has derived the following elements: Major axis, 0.636"; minor axis, 0.187"; maximum distance, 0.32"; minimum distance, 0.08"; position angle major axis, 125.4°; period, 11.13 years.

Telescopes.—The number of telescopes annually manufactured in the United States by Alvan Clark & Sons, of Cambridgeport, Mass., and by John A. Brashear, of Allegheny, Pa., besides other makers of lesser note, indicates a wonderful advance of astronomy in this country.

Because of the great difficulty of casting perfect disks, only one has been secured for the 40-inch telescope of the Observatory of Southern California, and not two, as was reported last year, unless one was returned, and consequently no progress has been made.

For the Bruce Photographic telescope neither disk has been received, but the Clarks have nearly completed the great prism—25 inches square—to be attached to the front of its 24-inch objective. Great results are looked for by astronomers from this instrument, which Prof. Pickering calls a "photographic doublet," being only 11 feet focus. It is, in fact, a photographic camera. "With it," he says, "a portion of the sky covering twenty-five square degrees can be photographed with good definition, while only three or four degrees can be covered equally well with

telescopes of the usual form." The time to photograph the entire sky, without after enlargement, will be reduced in the same proportion. With such a doublet, each hemisphere could be covered in one year with 800 plates.

The building for the great equatorial Coudé, at Paris, is completed. Instruments of this kind—"elbowed telescopes"—are finding much favor in other countries besides France. This at Paris has an objective 24 inches in diameter, and two plane mirrors of, respectively, 20 and 34 inches in diameter. A photographic objective, also of 24 inches aperture, is provided, and the change from one to the other can be easily and quickly made. Photographs of the moon 11 inches in diameter can be taken without subsequent enlargement.

The 16.2-inch telescope for Goodsell Observatory, Northfield, Minn., is finished, and Prof. W. W. Payne, its director, speaks highly of its performance on difficult test objects. The crown disk was obtained from Mantois, of Paris, and the flint from Jena, of Germany. The computations for the curves were made by Dr. C. S. Hastings, of Yale University, on a new plan, and this is the largest objective ever made on this formula. The per cent. of merit for color correction and blackness of field is 2.11, while if made of the usual curves it would be but 1.61. J. A. Brashear, of Pittsburg, ground and polished the lenses, and Warner and Swasey, of Cleveland, Ohio, constructed the mounting and dome. The total weight of the telescope and its accessories is 12,700 pounds.

Prizes and Benefactions.—Of the gift of \$6,000 from Miss Catharine Bruce, for the promotion of original astronomical research, the entire sum has been distributed by Prof. Pickering in accordance with the donor's wishes. Among the recipients were the following Americans: Prof. W. W. Payne, Editor of the "Sidereal Messenger"; Prof. E. S. Holden, Director of the Lick Observatory; Prof. Simon Newcomb, Superintendent of the American Nautical Almanac Office; Prof. Henry A. Rowland, of Johns Hopkins University; and Prof. Lewis Swift, Director of the Warner Observatory.

The Lalande prize of the French Academy of Sciences, of the value of 540 francs, has been awarded to Prof. Schiaparelli, of Milan, Italy, for, chiefly, his observations tending to prove the synchronization of the rotational and revolutionary periods of Mercury and Venus.

The Valz prize has been adjudged to Prof. S. Glasenapp, Director of the Observatory of the University of St. Petersburg, Russia, for his investigations of the orbits of the double stars in the Pulkowa Catalogue.

Prof. C. A. Young, Director of the Halstead Observatory, Princeton, N. J., has received the Janssen prize for his spectroscopic discoveries.

The Danish Academy of Sciences has given a gold medal to Baron E. v. Haerdtl, of Innsbruck, Austria-Hungary, for his memoir on the problem of three bodies, proposed by the Academy in 1889.

The Copley medal of the Royal Society of London was awarded to Prof. Simon Newcomb for his contributions to gravitational astronomy. Dr. Franklin was its first recipient in 1753, and it has been conferred annually ever since.

The Donohoe comet medal, *via* the Astronomical Society of the Pacific, has been presented to

Prof. Zona, of Palermo, Italy; to Dr. J. Spitaler, of Vienna, Austria; to Prof. F. W. Denning, of Bristol, England; to M. Coggia, of Marseilles, France; and three times to Prof. E. E. Barnard, of Mount Hamilton, California.

No gold medal was awarded by the Royal Astronomical Society of England.

Asteroids.—Since the compilation of last year's report, twenty-two of these small planets have been discovered, eight of which have received names. As no complete list has appeared, and those of the text-books are erroneous in several respects, a catalogue recognized by astronomers as correct and complete to date is here given:

No.	Name.	Discoverer.	No.	Name.	Discoverer.	No.	Name.	Discoverer.
1.	Ceres	Piazza.	81.	Terpsichore	Tempel.	161.	Athor	Watson.
2.	Pallas	Olbers.	82.	Alcmene	Luther.	162.	Laurentia	Prosper Henry.
3.	Juno	Harding.	83.	Peatrix	De Gasparis.	163.	Erigone	Perotin.
4.	Vesta	Olbers.	84.	Clio	Luther.	164.	Eva	Paul Henry.
5.	Astræa	Hencke.	85.	Io	Peters.	165.	Loreley	Peters.
6.	Hebe	Hencke.	86.	Semele	Tietjen.	166.	Rhodope	Peters.
7.	Iris	Ilind.	87.	Sylvia	Pogson.	167.	Urda	Peters.
8.	Flora	Hind.	88.	Thisbe	Peters.	168.	Sibylla	Watson.
9.	Metis	Graham.	89.	Julia	Stephan.	169.	Zelia	Prosper Henry.
10.	Hygeia	De Gasparis.	90.	Antiope	Luther.	170.	Maria	Perotin.
11.	Parthenope	De Gasparis.	91.	Ægina	Stephan.	171.	Ophelia	Borelly.
12.	Victoria	Hind.	92.	Undina	Peters.	172.	Baucis	Borelly.
13.	Egeria	De Gasparis.	93.	Minerva	Watson.	173.	Ino	Borelly.
14.	Irene	Hind.	94.	Aurora	Watson.	174.	Phædra	Watson.
15.	Eunomia	De Gasparis.	95.	Arethusa	Luther.	175.	Andromache	Watson.
16.	Psyche	De Gasparis.	96.	Ægle	Coggia.	176.	Idunna	Peters.
17.	Thetis	Luther.	97.	Clotho	Tempel.	177.	Irma	Paul Henry.
18.	Melpomene	Hind.	98.	Ianthe	Peters.	178.	Bellsana	Palisa.
19.	Fortuna	Hind.	99.	Dike	Borelly.	179.	Clytemnestra	Watson.
20.	Marsilia	De Gasparis.	100.	Hecate	Watson.	180.	Garumna	Perotin.
21.	Lutetia	Goldschmidt.	101.	Helena	Watson.	181.	Eucharis	Cottenot.
22.	Calliope	Hind.	102.	Miriam	Peters.	182.	Elsa	Palisa.
23.	Thalia	Hind.	103.	Hera	Watson.	183.	Istria	Palisa.
24.	Themis	De Gasparis.	104.	Clymene	Watson.	184.	Deiopaia	Palisa.
25.	Phocæa	Chacornac.	105.	Artemis	Watson.	185.	Eunike	Peters.
26.	Proserpina	Luther.	106.	Dione	Watson.	186.	Coluta	Prosper Henry.
27.	Euterpe	Hind.	107.	Camilla	Pogson.	187.	Lambertia	Coggia.
28.	Bellona	Luther.	108.	Hecuba	Luther.	188.	Monnippe	Peters.
29.	Amphitrite	Marth.	109.	Felicitas	Peters.	189.	Phthia	Peters.
30.	Urania	Hind.	110.	Lydia	Borelly.	190.	Ismene	Peters.
31.	Euphrosyne	Ferguson.	111.	Ata	Peters.	191.	Colga	Peters.
32.	Pomona	Goldschmidt.	112.	Iphigenia	Peters.	192.	Nausicaa	Palisa.
33.	Polyhymnia	Chacornac.	113.	Amalthea	Luther.	193.	Ambrosia	Coggia.
34.	Circæ	Chacornac.	114.	Cassandra	Peters.	194.	Proco	Peters.
35.	Leucothea	Luther.	115.	Thyra	Watson.	195.	Eurycleia	Palisa.
36.	Atalanta	Goldschmidt.	116.	Sirona	Peters.	196.	Philomeia	Peters.
37.	Fides	Luther.	117.	Lomia	Borelly.	197.	Arete	Palisa.
38.	Leda	Chacornac.	118.	Peitho	Luther.	198.	Ampella	Borelly.
39.	Lætitia	Chacornac.	119.	Aithæa	Watson.	199.	Byblis	Peters.
40.	Harmonia	Goldschmidt.	120.	Lachesis	Borelly.	200.	Dynamene	Peters.
41.	Daphne	Goldschmidt.	121.	Hermione	Watson.	201.	Penelope	Palisa.
42.	Isis	Pogson.	122.	Gerda	Peters.	202.	Chryseis	Peters.
43.	Ariadne	Pogson.	123.	Brunhilda	Peters.	203.	Pompela	Peters.
44.	Nysa	Goldschmidt.	124.	Alceste	Peters.	204.	Callisto	Palisa.
45.	Eugenia	Goldschmidt.	125.	Liberatrix	Prosper Henry.	205.	Martha	Palisa.
46.	Hestia	Pogson.	126.	Velleda	Paul Henry.	206.	Hersilia	Peters.
47.	Aglaja	Luther.	127.	Johanna	Prosper Henry.	207.	Hedda	Palisa.
48.	Doris	Goldschmidt.	128.	Nemesis	Watson.	208.	Lacrimosa	Palisa.
49.	Pales	Goldschmidt.	129.	Antigone	Peters.	209.	Dido	Peters.
50.	Virginia	Ferguson.	130.	Electra	Peters.	210.	Isabella	Palisa.
51.	Nemeusa	Laurent.	131.	Vala	Peters.	211.	Isolda	Palisa.
52.	Europa	Goldschmidt.	132.	Æthra	Watson.	212.	Medea	Palisa.
53.	Calypso	Luther.	133.	Cyreno	Watson.	213.	Lilæa	Peters.
54.	Alexandra	Goldschmidt.	134.	Sophrosyne	Luther.	214.	Aschera	Palisa.
55.	Pandora	Searle	135.	Hertha	Peters.	215.	Cenone	Knorro.
56.	Melete	Goldschmidt.	136.	Austria	Palisa.	216.	Cleopatra	Palisa.
57.	Mnemosyne	Luther.	137.	Melibœa	Palisa.	217.	Eudora	Coggia.
58.	Concordia	Luther.	138.	Tolosa	Perotin.	218.	Bianca	Palisa.
59.	Elpis	Chacornac.	139.	Juewa	Watson.	219.	Thuenelda	Palisa.
60.	Echo	Ferguson.	140.	Siwa	Palisa.	220.	Stephania	Palisa.
61.	Danaë	Goldschmidt.	141.	Lumen	Paul Henry.	221.	Eos	Palisa.
62.	Erato	Forster.	142.	Polana	Palisa.	222.	Lucia	Palisa.
63.	Ausonja	De Gasparis.	143.	Adria	Palisa.	223.	Rosa	Palisa.
64.	Angelina	Tempel.	144.	Vibilia	Peters.	224.	Oceana	Palisa.
65.	Cybele	Tempel.	145.	Adeona	Peters.	225.	Henrietta	Palisa.
66.	Maia	Tuttle.	146.	Lucina	Borelly.	226.	Weringia	Palisa.
67.	Asia	Pogson.	147.	Protogenia	Shulhof.	227.	Philosophia	Paul Henry.
68.	Leto	Luther.	148.	Gallia	Prosper Henry.	228.	Agathe	Palisa.
69.	Hesperia	Schiaparelli.	149.	Medusa	Perotin.	229.	Adelina	Palisa.
70.	Panopea	Goldschmidt.	150.	Nuwa	Watson.	230.	Athamantis	L. de Ball.
71.	Niobe	Luther.	151.	Abundantia	Palisa.	231.	Vindobona	Palisa.
72.	Feronia	Peters.	152.	Atala	Paul Henry.	232.	Russia	Palisa.
73.	Clytia	Tuttle.	153.	Hilda	Palisa.	233.	Asterope	Borelly.
74.	Galatea	Tempel.	154.	Bertha	Prosper Henry.	234.	Barbary	Peters.
75.	Eurydice	Peters.	155.	Scylla	Palisa.	235.	Carolina	Palisa.
76.	Frela	D'Arrest.	156.	Xantippe	Palisa.	236.	Honorio	Palisa.
77.	Frigga	Peters.	157.	Dejanira	Borelly.	237.	Cælestina	Palisa.
78.	Diana	Luther.	158.	Coronis	Knorro.	238.	Hypatia	Knorro.
79.	Eurynome	Watson.	159.	Æmilia	Paul Henry.	239.	Andrastea	Palisa.
80.	Sappho	Pogson.	160.	Una	Peters.	240.	Vanadis	Borelly.

No.	Name.	Discoverer.	No.	Name.	Discoverer.	No.	Name.	Discoverer.
241.	Germania.....	Luther.	268.	Adorea.....	Borelly.	295.	Theresa.....	Palisa.
242.	Oriemhilda.....	Palisa.	269.	Justitia.....	Palisa.	296.	Phaetusa.....	Palisa.
243.	Ida.....	Palisa.	270.	Anahita.....	Peters.	297.	Cecilia.....	Palisa.
244.	Sita.....	Palisa.	271.	Penthesilea.....	Kuorre.	298.	Baptistina.....	Charlois.
245.	Vera.....	Pogson.	272.	Antonia.....	Kuorre.	299.	Thora.....	Palisa.
246.	Asperina.....	Borelly.	273.	Atropos.....	Palisa.	300.	Geraldina.....	Charlois.
247.	Eucrate.....	Luther.	274.	Philagoria.....	Palisa.	301.	Bavaria.....	Palisa.
248.	Lamela.....	Palisa.	275.	Sapientia.....	Palisa.	302.	Clarissa.....	Charlois.
249.	Ilsa.....	Peters.	276.	Adelheid.....	Palisa.	303.	Josephina.....	Miloslevich.
250.	Bettina.....	Palisa.	277.	Elvira.....	Charlois.	304.	Olga.....	Palisa.
251.	Sophia.....	Palisa.	278.	Paulina.....	Palisa.	305.	.....	Charlois.
252.	Clementina.....	Perotin.	279.	Thule.....	Palisa.	306.	Unitas.....	Miloslevich.
253.	Mathilde.....	Palisa.	280.	Philia.....	Palisa.	307.	.....	Charlois.
254.	Augusta.....	Palisa.	281.	Lucretia.....	Palisa.	308.	.....	Borelly.
255.	Opavia.....	Palisa.	282.	Clorinde.....	Charlois.	309.	Fraternitas.....	Palisa.
256.	Walpurga.....	Palisa.	283.	Emma.....	Charlois.	310.	.....	Charlois.
257.	Silesia.....	Palisa.	284.	Amella.....	Charlois.	311.	.....	Charlois.
258.	Tycho.....	Luther.	285.	Regina.....	Charlois.	312.	.....	Charlois.
259.	Alethea.....	Peters.	286.	Iclea.....	Charlois.	313.	Chaldaa.....	Palisa.
260.	Huberta.....	Palisa.	287.	Nephtys.....	Peters.	314.	.....	Charlois.
261.	Prymno.....	Peters.	288.	Glauko.....	Luther.	315.	.....	Palisa.
262.	Valda.....	Palisa.	289.	Nenotta.....	Charlois.	316.	.....	Charlois.
263.	Dresda.....	Palisa.	290.	Bruna.....	Palisa.	317.	.....	Charlois.
264.	Libbussa.....	Peters.	291.	Alice.....	Palisa.	318.	.....	Charlois.
265.	Anna.....	Palisa.	292.	Ludovica.....	Palisa.	319.	.....	Charlois.
266.	Alina.....	Palisa.	293.	Brasilia.....	Charlois.	320.	.....	Palisa.
267.	Tirza.....	Charlois.	294.	Felicia.....	Charlois.	321.	.....	Palisa.

AUSTRALASIA, a division of the globe embracing the continent of Australia and the islands of the South Sea and Western Pacific, most of which are under British dominion. The statistics of population for the British Australasian colonies for 1889 are given in the following table:

COLONIES.	Population.	Births.	Deaths.	Immigration.	Emigration.
New South Wales.....	1,122,200	37,295	14,796	64,197	48,557
Victoria.....	1,118,028	36,359	19,392	84,582	68,418
Queensland.....	406,658	14,401	6,132	35,606	24,600
South Australia.....	324,484	10,318	8,501	9,239	8,736
Western Australia.....	48,698	1,594	611	2,850	2,883
Tasmania.....	151,480	4,757	2,098	28,443	20,771
New Zealand.....	620,451	18,457	5,772	15,392	15,178
Fiji.....	124,919	4,193	4,714	.....	.....

The census taken in 1891 shows a remarkable increase in the population of the cities. Melbourne, which now contains nearly one half of the total population of Victoria, has increased 72 per cent., while the other parts of the colony show an increase of only 11 per cent. in ten years. The present population of Sydney, the capital of New South Wales, is 386,000, showing an increase of 70 per cent. during the decade. The population of the whole colony is returned as 1,134,000, exclusive of Chinese. Adelaide, the capital of South Australia, has 133,000 inhabitants, or 29,000 more than a decade ago.

Finance.—The revenue, expenditure, and debt of each of the colonies are as follow:

COLONIES.	Revenue.	Expenditure.	Public debt.
New South Wales *.....	£9,063,397	£9,250,271	£46,616,449
Victoria.....	8,511,105	9,750,204	41,877,693
Queensland.....	8,211,795	3,605,775	28,105,684
South Australia.....	2,478,981	2,404,179	20,485,500
Western Australia *.....	488,642	86,000	1,871,981
Tasmania.....	709,486	681,674	5,019,050
New Zealand *.....	8,991,919	8,992,912	87,162,981
Fiji *.....	68,722	57,710	251,089

* 1889.

† 1890.

Commerce and Production.—The foreign trade of the several colonies in 1889 is shown in the following table:

COLONIES.	Imports.	Exports.
New South Wales.....	£22,863,057	£28,204,934
Victoria.....	24,402,760	12,794,784
Queensland.....	6,052,562	7,736,309
South Australia.....	6,804,451	7,259,365
Western Australia.....	518,127	761,891
Tasmania.....	1,383,665	1,459,857
New Zealand.....	6,297,097	9,880,265
Fiji.....	189,393	864,251

Most of the settled portions of Australia are within the temperate zone. The raising of sheep and mining are the principal industries. For agriculture the climate is too dry, and artificial irrigation is yet in the experimental stage. In New South Wales only 1,164,475 acres were under cultivation in 1890. There were 6,570,335 bushels of wheat produced, and 5,354,827 bushels of corn. Other grains are grown, as well as hay and fodder in large quantities, sugar cane, of which the product in 1890 was 168,862 tons, oranges, and the vine, of which the yield was 688,085 gallons of wine and 3,702 of brandy. The number of sheep in 1889 was 50,106,768; of horned cattle, 1,741,592; of horses, 430,777. The number of persons engaged in agriculture and pastoral pursuits was 106,226. A few of the forests are owned by the state and all are under state control, owners paying a royalty on all timber cut, which was 185,021,000 feet in 1889, valued at £617,000. Gold is found everywhere, but the rich deposits have been exhausted. In the four years 1886-'89 the gold coined and exported was £1,482,330, about one quarter as much as during a like period in the first twenty years of gold mining. Silver-lead ore, silver, and lead were produced in 1889 to the amount of £1,899,197; copper product, £122,444; tin, £207,670; coal, £1,632,849. Manufacturing industries in New South Wales employ 44,989 persons. The wool export in 1889 was 266,229,029 pounds.

Victoria, aided by a protective tariff and having a limited area of pasturage, has become the leading manufacturing colony. The number of hands employed in 1889 was 59,181. Gold mining has declined in the past twenty years to the

same extent as in New South Wales, though for several years the decline has been slow. In 1889 the amount of gold mined was valued at £2,459,356, the number of miners at work being 24,047. About one half the area suitable for agriculture or pastoral purposes has been alienated, viz., 22,492,300 acres. The product of wheat in 1889 was 11,496,000 bushels; of oats, 5,645,000 bushels; of barley, 1,831,000 bushels. Vineyards cover 15,662 acres, about double the area devoted to wine in New South Wales. The number of sheep in 1889 was 10,882,231; of cattle, 1,394,209; of horses, 329,335. The wool exported in 1889 was 135,607,370 pounds, more than half being the product of other colonies.

Queensland, lying in its northern parts under the tropics, is a sugar-growing colony. Only 9,919,692 acres, about 2 per cent. of the area of the colony, have been alienated by the Government. About half the country is covered with forests, and little has yet been done to utilize this wealth. The leased sheep and cattle runs, 6,547 in number, occupy 289,706,747 acres. The number of sheep in 1889 was 14,470,095; of cattle, 4,872,416; of horses, 352,364. There were 232,643 acres under grain crops, mostly Indian corn, and 49,741 acres under sugar cane in 1889. The gold product is increasing, amounting in 1889 to £2,586,000. The value of tin mined was £156,406; of silver and lead, £61,500. Wool was exported in 1889 to the amount of £2,680,134; sugar, £443,068; hides, £127,000; preserved meats, £83,168.

South Australia raises large quantities of wheat for export. The area under this crop in 1889-'90 was 1,842,961 acres, producing 14,577,358 bushels. It is also the chief wine-growing colony, producing from 7,352 acres of vineyards 1,052,086 gallons of wine in 1889. The live stock numbered 6,386,617 sheep, 324,412 cattle, and 170,515 horses. The output of copper, silver, and other minerals was valued at £349,430. Exports of wool in 1889 were valued at £2,194,701; wheat and flour, £928,675, of which £691,777 represent flour.

Western Australia is a new colony which has recently been admitted to the ranks of self-governing states, having a variety of soil and climate, vast areas suitable for pasturage and agriculture, and mineral resources of unknown extent. Of a total area of 678,400,000 acres, only 117,833 were cultivated in 1889. The total area of public lands sold up to the end of 1889 was 3,315,905 acres, of which 1,416,747 acres were alienated during that year. The area sown to wheat in 1889 was 35,517 acres. The average yield of wheat is 14 bushels to the acre; of barley, 17 bushels; of wine of good quality, 189 gallons. There were 1,088 acres planted to vines in 1889. Gold, silver, lead, tin, and coal have been found in the colony. The exports of wool in 1889 were £395,904 in value; of shells, £104,450; of timber, £63,080; of sandalwood, £57,465.

Tasmania exports considerable quantities of fruit in the fresh and preserved states. This export was valued in 1889 at £128,822; hops, £23,115; timber and bark, £150,409. The wool export was valued at £283,237. A more important product is tin, which was exported to the value of £345,407, and gold to the value of £123,-

486. There are rich deposits of galena ore, and large beds of coal.

In New Zealand about two thirds of the soil is capable of being made productive. The wheat acreage in 1890 was 335,861 acres, yielding 8,448,000 bushels, an average of 25 bushels to the acre. The oat crop was 13,673,000 bushels. Of live stock, the colony in 1886 had 187,382 horses, 853,358 cattle, and 16,580,388 sheep. In sheep there has been a large increase in recent years. Butter and cheese making are important industries, and frozen meat is one of the staples of the export trade. The export in 1889 was 656,822 hundred-weight of the value of £783,387. The export of wool was 102,227,354 pounds, having nearly doubled in ten years. Woolen mills on the islands worked up 3,556,000 pounds. Of grain, 6,027,201 bushels were exported. The export of Kauri gum was 7,519 tons, valued at £329,590. Timber has recently become an export article of some importance, the shipments in 1889 amounting to 42,568,000 feet. The exports of butter and cheese were valued at £213,945; hides and skins, £203,104; tallow, £159,460; grain and flour, £1,128,955. The gold mined in 1889 was £808,549 in value, not one third as much as in 1863, the year of greatest production.

Fiji in 1889 exported 13,178 tons of sugar, of the value of £263,553; copra of the value of £41,543; and bananas of the value of £42,605.

Navigation.—The following table gives the number of vessels and the tonnage entered and cleared at the ports of the colonies in 1889:

COLONIES.	ENTERED.		CLEARED.	
	Number.	Tonnage.	Number.	Tonnage.
New South Wales....	3,254	2,632,081	3,229	2,681,098
Victoria.....	2,855	2,270,827	2,856	2,323,351
Queensland.....	760	506,780	773	494,229
South Australia.....	1,036	978,532	1,046	980,810
Western Australia*..	849	497,232	845	507,556
Tasmania.....	842	455,247	819	453,999
New Zealand.....	781	602,684	762	598,252
Fiji.....	89	51,228	.....	.....

* 1888.

Communications.—The Australian colonies have the greatest railroad mileage of any country in proportion to the number of inhabitants, unless Canada still holds that distinction; but in proportion to the extent of its territory Australia is the most scantily provided with rail communications of all countries. The capital to build the lines, which are state property managed by the colonial governments, was raised in England by means of public loans, and these form the bulk of the debts of the colonies. Following are the statistics of mileage, capital, cost, gross earnings, and expenditure of the Australasian railroads for 1889:

COLONIES.	Miles completed.	Capital expenditure.	Receipts.	Expenses.
New South Wales	2,132	£30,555,123	£2,638,086	£1,665,835
Victoria.....	2,341	29,125,280	3,110,140	1,945,887
Queensland.....	2,064	13,332,046	796,344	594,649
South Australia.....	1,756	.....	.....	.....
Western Australia	500	.....	.....	.....
Tasmania.....	874	.....	.....	.....
New Zealand....	1,809	15,085,000	1,095,569	652,787

The postal traffic of the colonies in 1889 was as follows:

COLONIES.	Letters.	Papers.	Packets.	Revenues.	Expenses.
New South Wales.....	58,971,300	86,580,500	7,869,400	£205,584	£268,006
Victoria.....	48,097,268	20,662,732	6,810,283	* £16,186	* 616,796
Queensland.....	13,070,088	10,937,389	1,914,495	183,460	210,404
South Australia.....	16,388,607	9,085,714	918,122	.....	.....
Western Australia†.....	2,253,814	1,193,096	108,094	.....	.....
Tasmania.....	4,703,384	5,424,657	681,706	39,596	44,288
New Zealand.....	42,301,288	16,721,016	5,881,493	222,978	164,101

* Including telegraph service.

† 1887.

All the Australian colonies in 1891 signified their accession to the Postal Union, securing thereby the uniform letter-postage rate of $2\frac{1}{2}$ d. to all the principal commercial nations. By a telegraph convention they also obtained a reduction in the rates for cablegrams to Europe.

The length of telegraphs in the several colonies, and the extent of the traffic in 1889, can be seen in the following table:

COLONIES.	Miles of wire.	Messages.	Net revenue.
New South Wales.....	22,606	3,433,652	£186,862
Victoria.....	8,080	2,885,919	127,720
Queensland.....	16,981	1,433,398	* 24,278
South Australia.....	11,677	.....	.....
Western Australia.....	3,545	97,587	10,165
Tasmania.....	2,690	280,359	* 1,543
New Zealand.....	11,827	1,802,987	5,029

* Net loss.

Federation.—A federal council was empowered by an act of the British Parliament passed in 1885 to legislate on matters connected with the relations of Australasia and the islands of the Pacific, fisheries outside territorial limits, civil jurisdiction and the enforcement of judgments beyond the limits of the several colonies, and common measures pertaining to defense, quarantine, copyright, patent rights, commercial law, marriage and divorce, naturalization, and other matters in which uniformity or community of action might be desirable. The Federal Council met in 1886, 1888, and 1889. New South Wales and New Zealand declined to enter the union of which this body was the organ, and South Australia first joined in 1889. In 1890, instead of a meeting of the council, a conference of representatives of all the self-governing colonies met in Melbourne, in February, to consider a plan of confederation and a scheme of defense. This conference decided in favor of a national Australasian convention, composed of not more than seven delegates from each self-governing colony and four from each Crown colony, to meet early in 1891, at the invitation of the Premier of Victoria, for the purpose of framing a Federal constitution. The New Zealand delegates could not promise that their colony would enter the proposed federation, and at his instance the resolution moved by Sir Henry Parkes, the Premier of New South Wales, declaring it to be the opinion of the conference that "the best interests and the future prosperity of the colonies will be promoted by an early union under the Crown," was confined to the continent of Australia, with a proviso that the remoter colonies of Australasia should be entitled to admission at such times and under such conditions as might be agreed upon. The main resolution expressed recognition of the services of the convention of

1883, which founded the Federal Council, but set forth that subsequent years had developed the national life of Australia in population, in wealth, in the discovery of resources, and in self-governing capacity, to an extent which justified "the higher act, at all times contemplated, of the union of these colonies under one legislative and executive government." The New Zealanders held aloof, not only on account of their remoteness from the center of government of the future confederation and their unwillingness to share in the expense of a system of defense that could not give them the same degree of protection as the other colonies, but for the reason that they feared that a political union of the Australian colonies would pave the way for national independence; for the sentiment of loyalty to the British Crown, which is dying out in Australia, and is supplanted among the native Australians by a national spirit hostile to the British connection, is still strong in the more recently colonized New Zealand. In view of the prospect that New Zealand might join the federation in the future, its delegates in the conference voted for Sir Henry Parkes's resolution, and the colonial Legislature, after a spirited debate, voted to send representatives to the Federation Convention. In the Australian colonies the federation proposals met with the opposition of the high Protectionists in Victoria and of some of the leading Free Traders in New South Wales. The legislative assemblies finally agreed to them, and selected as delegates the leaders of the Government and of the Opposition and eminent jurists from each colony. Only James Service, the originator of the Federal Council, predicted the failure of Sir Henry Parkes's scheme of complete federation, and declined to serve as a delegate from Victoria. The Federal Council met at Hobart, Tasmania, on Jan. 20, 1891, only Victoria, Queensland, and Tasmania being represented. South Australia had formally withdrawn. The Council passed a bill declaring an order of lunacy issued by the Supreme Court of one colony valid in the others, and adopted an address to the Queen respecting the acquisition of land in the New Hebrides, and praying that restrictions on trade with the natives should apply equally to all nationalities.

The Federation Convention was convened at Sydney, New South Wales, on March 2. Sir Henry Parkes was elected president. There was a general agreement that the Federal Government should be carried on by a governor-general, a responsible ministry, and two legislative houses, a senate in which each colony should have equal representation, and a lower house elected on the basis of population; and in regard to intercolonial free trade, a Federal judiciary, and the necessity of federating for defense, there

was practical agreement. With respect to the powers to be accorded to the legislative houses, the smaller colonies were desirous of making the authority of the upper house as large as possible; in regard to the tariff to be maintained by the federation against the world, Victoria wished the rates fixed high, to protect its industries, while New South Wales was in favor of a low tariff; and on the question of the right of appeal from the Federal Supreme Court to the Judicial Committee of the Privy Council in London, Victoria and New Zealand would preserve this link binding them to the mother country, which the other strong colonies wished to sever. Whether the new nation should adopt the principles of the Canadian Constitution or the truer federal theories on which the United States are constituted was the main subject of difference, and this was practically decided when it was agreed that the name of the confederation should be, not the "Dominion," but the Commonwealth of Australia, by 26 votes to 13, this title indicating furthermore the prevalent aspirations for national independence. Sir George Grey, a delegate from New Zealand, who has formerly been governor under the Crown of various colonies, moved that the governor-general should be elected by the people; but this proposition, which the Imperial Government would be certain to reject, was negatived by the majority of 35 to 8. The draft constitution was amended in minor particulars only during its discussion by the committee of the whole. It was adopted by a unanimous vote on April 9. After agreeing to a motion recommending the parliaments of the individual colonies to call special conventions for the ratification of the Constitution as framed, and to one requesting the Imperial Government, as soon as any three colonies should adopt the Constitution, to take the necessary steps to establish it in those colonies, the convention dissolved. When the act establishing the Commonwealth of Australia comes into force, which will be six months after its adoption by the Imperial Parliament, the governors of the individual colonies will no longer be nominated by the Imperial Government, but will be appointed in such manner as the Parliament of each state of the Commonwealth shall direct. The Federal Council will cease to exist. The main provisions of the bill adopted by the Federation Convention are as follows:

The colonies will be called States. The Legislature will consist of the Queen, a Senate, and a House of Representatives. The Governor-General will be appointed by the Queen at a salary of not less than £10,000 a year.

The Senate will consist of eight members from each State, chosen by the Parliaments of each State for six years, half retiring every three years, and the President of the Senate will be chosen by the Senate itself. He will have a vote on every measure, and when there is a tie vote the measure is lost.

The House of Representatives will be elected every three years by the people of the several States in proportion to their population on a basis of one member for every 30,000 inhabitants, the *minimum* number of members for each State to be four. The Speaker will be chosen by the House, and will have the casting vote when the votes are equal.

The members of both houses will receive £500 each per annum. No member can hold an office of profit or trust under the Crown, but ministers will not be

compelled to offer themselves for re-election on appointment.

The Parliament of the Commonwealth will have power to make laws on any of the following subjects:

(1) The regulation of trade and commerce with other countries and among the States; (2) customs, excise, and bounties; (3) the raising of money by any other mode or system of taxation, but taxation must be uniform throughout the Commonwealth; (4) the borrowing of money on public credit; (5) the postal and telegraphic services; (6) military and naval defenses; (7) navigation and shipping; (8) ocean beacons, buoys, light-houses, and light-ships; (9) quarantine; (10) fisheries; (11) census and statistics; (12) currency, coinage, and legal tender; (13) banking, the incorporation of banks, and the issue of paper money; (14) weights and measures; (15) bills of exchange; (16) bankruptcy and insolvency; (17) copyrights, patents, and trade marks; (18) naturalization and aliens; (19) the status of foreign corporations and those formed within Australia; (20) marriage and divorce; (21) the service and execution of civil process, and the judgments of the courts of one State in the other States; (22) the recognition of the laws, records, and judicial proceedings of the various States; (23) immigration and emigration; (24) the influx of criminals; (25) external affairs and treaties; (26) the relations of the Commonwealth to the islands of the Pacific; (27) river navigation with respect to the common purposes of two or more States; (28) the control of railways with respect to transport for the purposes of the Commonwealth; (29) matters referred to it by the Parliament of any State, but such law only to extend to the State or States by whom the matter is referred and such as afterward adopt such law; (30) the exercise of legislative powers with respect to the affairs of Australia which are at present exercised only by the Imperial Parliament or the Federal Council of Australia; (31) the manufacture of munitions of war; (32) matters necessary for carrying into execution the foregoing powers.

Parliament will also, subject to the provisions of the Constitution, have power to make laws necessary for peace, order, and good government with respect to the following matters: (1) The affairs of people of any race regarding whom it is deemed necessary to make special laws not applicable to the general community, but this power is not extended to the aborigines of Australia or the Maoris of New Zealand; (2) the government of any territory surrendered by any State for the seat of government or other purposes; (3) matters relating to departments of the public service transferred to the Executive of the Commonwealth. Laws appropriating revenue or imposing taxation must be sent down by message of the Governor-General to the House of Representatives. The powers of the Senate will be co-ordinate with those of the Lower House, except with regard to appropriation and taxation bills, which the Senate may affirm or reject, but not amend. Laws imposing taxation shall deal with taxation only, and, with the exception of customs and tariffs, with only one subject. Money bills of a general character must not be tacked on to appropriation bills; and in the case of bills which the Senate may not amend, it may return the same to the Lower House with a message requesting it to omit or amend any item; and the Lower House may, on receiving such message, if it thinks fit, make such omissions or amendments. The Governor-General's assent is required for all measures, and he will have the power of reserving any measures for the Queen's approval. Her Majesty in Council may disallow any bill within two years after its receipt. The executive power vested in the Queen will be exercised by the Governor-General, advised by a Council of seven ministers, who may sit in either house; £15,000 to be set apart for the payment of the ministers, who will constitute the Federal Executive Council and be the Queen's ministers of state for the Commonwealth.

The Governor-General will be the commander-in-chief of the military and naval forces. The Execu-

tive Government, as soon as formed, will take over the control of customs, excise, post and telegraphs, military and naval defense, ocean beacons, buoys, light-houses, light-ships, and quarantine.

The Supreme Court of Australia will consist of a chief justice and not fewer than four other judges, to be appointed by Parliament, and to hold office during good behavior, and will be the final court of appeal for Australia; but the Queen may, in all cases where public interests are involved, grant leave to appeal to herself in council. Indictable offenses must be tried in the State in which the offense is committed.

Parliament will have the sole power of imposing customs and excise; but the present duties will remain in force until a uniform tariff has been passed, when free trade will prevail between the States of the Commonwealth. The revenue collected will be applied, in the first instance, to defray the expenses of government, the surplus to be applied in such manner and for such purposes as Parliament may determine.

Parliament may make provision for the consolidation of the whole or part of the debts of the States. The States will retain all the powers they at present possess, except those expressly delegated to the Commonwealth. When a State law is inconsistent with the law of the Commonwealth, the latter will prevail.

The Governors of the States will be appointed by the local parliaments as they think fit. All references to the Queen must be made through the Governor-General.

The Constitutions of the States will remain as they are, unless altered by the States themselves. Any of the existing colonies, on adopting the Constitution, may be admitted into the Commonwealth. New States may be admitted under such conditions as Parliament may see fit to impose. The seat of government of the Commonwealth shall be determined by Parliament, and, until so determined, the place of meeting of Parliament shall be fixed by a majority of the governors of the States. Any amendment of the Constitution can only be effected in the following manner: Any law for the alteration of the Constitution must be passed by an absolute majority of the Senate and the House of Representatives, and thereupon be submitted to conventions elected by electors of the several States qualified to vote for the election of members of the House of Representatives. Such conventions shall be held as the Parliament of the Commonwealth prescribes. If the proposed amendment be approved by the conventions of a majority of the States, if the States composing this majority contain a majority of the people of the Commonwealth, it shall become law, subject, however, to the Queen's power of disallowance; but an amendment by which the proportionate representation of any State in either House of the Parliament of the Commonwealth is diminished, shall not become law without the consent of the convention of that State.

A proposition for the assumption by the Commonwealth of the public debts of all the colonies on the basis of £40 per head of population, those whose debts are heavier having to pay the difference, and those owing less to be compensated, was deferred, to be acted upon by the Federal Parliament.

New South Wales.—The Governor is the Earl of Jersey, appointed in October, 1890. The ministry at the beginning of 1891 consisted of the following members: Premier and Colonial Secretary, Sir Henry Parkes; Colonial Treasurer, William McMillan; Attorney-General, George Bowen Simpson; Secretary for Lands, James Nixon Brunker; Secretary for Public Works, Bruce Smith; Minister of Public Instruction, Joseph Hector Carruthers; Minister of Justice, Albert John Gould; Postmaster-General, Daniel O'Connor; Secretary for Mines, Sydney Smith;

Vice-President of the Council without portfolio, William Henry Suttor.

For the session which opened on May 19, 1891, the Government offered legislative proposals of moment aside from the question of federation. The programme embraced a local government bill, and the abolition of plural voting and division of the colony into single electoral districts, together with minor measures relating to the regulation of coal mining, water conservation, local option, and courts of conciliation to arrange trade disputes. The financial record of the Government was excellent, showing an increase of revenue for the first six months of the year amounting to £420,000 as compared with the corresponding period of 1890, being an excess of £320,000 over the estimate. Yet the position of the veteran leader of the majority was not strong. The Government had offended the working men by its course of action during the great strike of sheep-shearers and their sympathizers on the railroads and docks, it having been accused of unduly favoring the employers. Mr. Dibbs, the leader of the Opposition, attacked the federation scheme of Sir Henry Parkes, which would be only a precursor of imperial federation, not of national independence as desired by the younger Australians. The Protectionists, who have grown into a strong party in New South Wales, were anxious to oust the Premier, who is the chief exponent of the free-trade idea in Australia, and thought that they could count on the united support of the working men. The admirable programme of the Government was not allowed to come under discussion. Sir Henry Parkes announced that the questions of district government and one man one vote should take precedence of the federation bill; but Mr. Dibbs attacked the federation proposal, declaring that its author had lost sight of the true interests of New South Wales, at the same time discrediting the financial statement of Mr. McMillan and the conduct of the Administration. On a vote of want of confidence the Government was sustained only by the casting vote of the Speaker. The tie vote of 63 on both sides was accepted as a defeat, and Parliament was dissolved. The result of the elections, which took place in the middle of June, surprised the politicians and disconcerted all their plans. After the ending of the prolonged and disastrous labor struggle the leaders of the working men had promised that there should be no more strikes, saying that labor would defend its interests henceforth in Parliament and find legislative redress for its wrongs. A Labor party was organized and disciplined, with the result that, when the returns were all in, it was found that the Loyal and Free-Trade party of the "Grand Old Man" of New South Wales was able to obtain only 51 seats, whereas the Native Australian, Protectionist, and Separatist forces, led by Mr. Dibbs and Mr. Barton, had 57; while, instead of sending four spokesmen to serve in a humble advisory capacity, as in the last Parliament, the Labor party came with a strong phalanx of 26 representatives, and there were besides 3 Independents affiliated with the Labor party. The Labor representatives were Protectionists, and were known to be anti-British and even Republican and opposed to the federation scheme. Therefore they

were expected to ally themselves with the party of Mr. Dibbs. It was a surprise to many that the ministry cared to retain their portfolios till Parliament met on July 15, and a coalition between Sir Henry and Mr. Dibbs against the new and, to both, dangerous element was considered probable. The vote of want of confidence moved by Mr. Dibbs disappointed this expectation; and when the ministry was sustained by the solid vote of the 29 Labor representatives, Mr. Black, their leader, declaring that they would support the Government "as far as it suits their purposes," speculation was rife regarding the price to be paid, and the eyes of the world were drawn to a Legislature in which an organized Labor party can dictate measures. In the opening speech the electoral reform bill, extending the franchise, abolishing plural voting, establishing single districts, doing away with the condition of a money deposit by candidates, and making registration the only condition of suffrage, was explained. A resolution in favor of woman suffrage was promised. In other respects the Government proposals were the same as were offered in the last message. The Postmaster-General, Daniel O'Connor, though one of the most popular members of the Government, had lost his seat in the elections, but was not allowed to resign. The conflict between the Sheep-shearers' Union and the Pastoralists, who had formed a counter-organization, broke out afresh during the year, engaging the attention of the ministers and Parliament. There was no dispute about hours, nor about wages, which were 18 s. a day, but only about the employment of unionists and non-unionists together. Sir Henry Parkes proposed a conference, which the shearers had originally rejected, but to which the employers now refused to accede unless the right of free contract was admitted. On this basis the contesting parties finally came together, the Secretary for Lands presiding over the meeting; and the shearers, who had recently driven non-unionists from their work by force and defied the public authorities, formally conceded freedom of contract, and the strike was declared at an end in the beginning of August. The motion of Sir Henry Parkes in favor of woman suffrage was lost by 57 votes against 34. At the end of July William McMillan retired from the ministry, which was reconstructed, Bruce Smith becoming Colonial Treasurer; E. Barton, Secretary for Public Works; W. H. Suttor, Postmaster-General; and D. O'Connor, Vice-President of the Executive Council.

Victoria.—The Governor is the Earl of Hopetoun, who was installed on Nov. 28, 1889. On Oct. 31 the coalition Cabinet of Duncan Gillies and Alfred Deakin, which had governed for four years, was overturned by a vote of 55 to 35. The refusal of the ministers to go to London for a large new loan for the satisfaction of constituencies wanting railroads, their financial mistakes, and their unpopular attitude in relation to the dock strike that was about to collapse, led to the falling away of their supporters and their sudden defeat in a parliament that followed them obsequiously and was without an organized Opposition a month or two before. The defection of about 25 representatives of labor constituencies in and around Melbourne was the

cause of so heavy and adverse a vote on the action of the Government in putting down picketing and intimidation. Mr. Monro, who led the attack, an Independent Liberal who had been Minister of Instruction under Sir Graham Berry in 1875, was asked to form a Cabinet, which was constituted on Nov. 4 as follows: Premier and Treasurer, James Monro; Attorney-General and Minister of Railways, William Shiels; Chief Secretary and Commissioner of Trade and Customs, G. D. Langridge; Commissioner of Crown Lands, Allan McLean; Commissioner of Public Works, James Wheeler; Minister of Water Supply, George Graham; Postmaster-General, John Gavan Duffy; Minister of Mines, A. R. Outtram; Minister of Defense and of Education, Lieutenant-Colonel Sir Frederick T. Sargood; Minister of Justice, J. M. Davies. It is, like all Victorian Cabinets of the past eight years, a coalition ministry composed of Liberals and Conservatives, the old party distinctions having been in a great measure obliterated, and in it the Conservative element predominates. The retiring Treasurer, who had expended \$13,000,000 of borrowed money while he was in office, left an empty exchequer and heavy liabilities to meet immediately. He had been accused of building useless railroads and granting bonuses to farmers and money for prospecting to gold-mining companies simply for the purpose of retaining his post. The strike, which involved various trades and was directed against imported labor, was practically ended before the end of 1890. The new Cabinet attempted to bridge over the financial difficulties by means of a new loan, but could not float it. A committee of public accounts was instituted. Parliament was opened on June 23. Both parties were in favor of the federation bill. Negotiations for offering it simultaneously and in the same manner in Victoria, New South Wales, and South Australia, in order that the three colonies might establish federation as soon as possible, had broken down, and each colony was left to follow its separate method of procedure. A bill to abolish plural voting was prominent in the Government programme, and, as in New South Wales, the ministry proposed to extend the principle of one man one vote, so as to include women among the electors. The ministry asked Parliament to do away with the Railway Commission, the creation of their predecessors. Among the other measures announced were the amendment of the local government acts, the setting apart of public lands for the endowment of State education, and mining, water conservancy, and irrigation bills. In the debate on the Federation bill the Assembly struck out the word "Commonwealth," and substituted "Federated States." The financial statement of Mr. Monro showed that the year ending June 30, 1891, closed with a deficiency of £797,000. Although the colony was suffering from commercial depression, increased taxation would be necessary to meet an excess of expenditures over revenue for the coming year that was estimated on the basis of existing sources at about £1,000,000.

Queensland.—The Governor is General Sir Henry Wylie Norman, who was transferred from Jamaica in December, 1888. The Cabinet in 1891 was composed of the following officers:

Premier, Chief Secretary, Attorney-General, and Vice-President of the Executive Council, Sir Samuel W. Griffith; Minister for Lands and Agriculture, S. Cowley; Minister for Railways and Postmaster-General, T. Unmack; Secretary for Mines and Minister for Public Instruction, W. O. Hodgkinson; Colonial Secretary and Secretary for Public Works, H. Tozer; Solicitor-General, T. J. Byrnes; Colonial Treasurer, Sir Thomas Mellwraith; without portfolio, H. Wilson. The question of the division of North and South Queensland, which has agitated the colony for a dozen years, has become more pressing since mining enterprise has developed the northern and central districts. The inhabitants of this northern section have urged the home Government to make an independent colony, on the ground that they are taxed for the benefit of the south. The chief objection advanced by the southerners was that the sugar planters and mine operators of the north, if they were allowed a free hand, would defy Australian opinion in respect to the importation of black and coolie labor. In 1887 Lord Knutsford replied to a deputation of North Queenslanders, that it would be difficult and undesirable to divide a colony having the privileges of responsible government unless the colonial Legislature requested it. That body had recently signified its sense of the proposition by a vote of 36 to 9 against separation, corresponding to the representation of the two sections in the Legislative Assembly. The movement in favor of separation had made such progress in October, 1890, that the vote had changed to 26 for separation to 32 against. A petition in favor of immediate separation had been forwarded to the Colonial Office in London, signed by 31 members of the Legislature. The home Government still held that it was a matter to be decided by the colony or reserved for the action of the future Parliament of the Australian States. A proposition to divide the colony into Northern, Central, and Southern Queensland received fewer votes than that for division into two colonies by a line running from Cape Palmerston. The evils complained of formerly by the North Queenslanders have not been remedied, for decentralization bills that have been proposed have not been carried, and local revenues and customs on goods consumed in the north are not applied for the benefit of that section. Sir Samuel Griffiths proposed an alternative scheme, that would reconcile the requirements of the different sections while preserving the integrity of the colony. This was subdivision, for administrative purposes and local self-government, into three provinces, each having its Parliament with control of certain specified funds, while the central Parliament would decide on matters of common and general Australasian interest. This proposal failed to obtain the approval of parliament in 1890, and was submitted again in the session that opened on June 30, 1891, when the draft of the Federal Constitution would also have to be discussed, the ratification of which would make division into autonomous provinces more advantageous. The Federal Union was approved in the Governor's speech, with a reservation as to amendments that might be necessary to give encouragement and enlightened sense to local patriotism

and advance material well-being. A naval defense bill for the establishment and maintenance of an additional squadron, in accordance with the agreement of 1887 that had been ratified by the parliaments of Great Britain and the other colonies, was passed without opposition. New land legislation was proposed to facilitate settlement. The budget statement showed an elastic revenue, the yield for 1891-'92 from taxation being estimated at £1,842,000, an increase of 7½ per cent. on the previous year. The gross revenue was estimated at £3,675,200, and the expenditure at £3,647,693. The ministry was chagrined at not being able to raise a fresh loan in London, in consequence of which all new public works, except such as will be immediately productive, have been discontinued. The labor disturbances that convulsed Australia in 1890 and 1891 began with a strike of the sheep-shearers of Queensland. The labor leaders assert that the employers began the struggle, and that their object was to crush unionism; and, further, that the governments, under the pretense of preserving order, aided the capitalists and enabled them to secure the victory. The Queensland Shearers' Union was at first successful in compelling the British India Shipping Company to accept only union wool. The Amalgamated Shearers' Union, covering New South Wales, Victoria, and South Australia, were unable to block the shipment of non-union wool from the southern Australian ports. The Trades and Labor Council, which took up the contest, was confronted by an association of employers. Attempts at mediation failed, and a temper was provoked on both sides that led in Queensland to violence. In and around Rockhampton bloody collisions occurred, and the Governor called out the troops to put an end to the disturbances. Leaders of the strike were prosecuted, and were sentenced to two or three years' imprisonment. The struggle between the unions of shearers and pastoralists in Queensland was ended in June, 1891, when unionists returned to work, signing the agreements exacted by the squatters, the whole point at issue being whether men should be free to contract for work on terms prescribed by the masters, or should conform to the rules laid down by the union. In drawing up the contracts that they required the men to sign, the employers intentionally made them very liberal, differing only in insignificant details from the union regulations.

South Australia.—The Governor is the Earl of Kintore, who assumed the government on April 11, 1889. The ministry consisted in 1891 of the following members: Premier and Treasurer, T. Playford; Chief Secretary, Sir J. C. Bray; Attorney-General, R. Homberg; Commissioner of Crown Lands, W. Copley; Commissioner of Public Works, W. B. Rounsevell; Minister of Education, D. Bews. At the meeting of Parliament on June 4, 1891, the Government was sustained on a motion of want of confidence by a majority of 7. The revenue for the year ending June 30 exceeded the expenditure by over £50,000. Important coal fields have been discovered recently. The settlers of northern Australia, like those in the tropical parts of Queensland, complain of the general Australian sentiment in regard to colored and Chinese

labor, the consequence of which is that cotton must be left to spoil in the field, sugar plantations have been abandoned, and rich tin, silver, and gold mines remain unworked.

Western Australia.—The Imperial Parliament conferred responsible government on Western Australia, the only one of the colonies on the continent that still remained under the partial control of the Crown, by the enabling act of 1890 embodying the new Constitution. The government is vested in the Governor, a Legislative Council of 15 members nominated in the first place by the Governor, but in the future to be elected, and a Legislative Assembly of 30 members, elected from as many districts. The qualification for voting is the ownership of real property worth £500 or the payment of £10 rent per annum. A member of either house must be the owner or occupant of property of five times such value. Power is reserved to the Crown to divide the country into two or more colonies, but the exclusive management and control of the waste lands of the Crown are vested in the colonial Legislature. The Governor is Sir William C. F. Robinson, who held the same office in 1874 and in 1880, and was re-appointed in 1889. The first Cabinet of Western Australia was constituted as follows: Premier and Treasurer, John Forrest; Chief Secretary, Mr. Strenton; Attorney-General, Mr. Burt; Commissioner of Lands, Mr. Marinton; Minister of Public Works, Mr. Venn.

Tasmania.—The Governor of the colony is Sir Robert G. C. Hamilton, who was appointed in January, 1887. The Cabinet in 1891 was composed of the following members: Premier and Chief Secretary, Philip Oakley Fysh; Treasurer, Bolton Stafford Bird; Attorney-General, Andrew Inglis Clark; Minister of Lands and Public Works, Alfred Pillinger. Parliament was dissolved on May 1, and the elections were fixed for May 22. The new Parliament was opened on July 8. The accounts for 1890 indicated that the period of depression was over. Instead of a deficit, there was a surplus at the close of the year of £35,000, showing an increase of £76,000 as compared with 1889. New railways had been opened, and others were in progress. The discovery and opening of silver mines added a new product to the resources of the island figuring for £17,000 in the exports.

New Zealand.—The Governor is the Earl of Onslow, formerly parliamentary Under Secretary for the Colonies, and afterward President of the Board of Trade, who was appointed to his present post in November, 1888. A new ministry came into office on Jan. 24, 1891, composed of the following members: Premier, Colonial Treasurer, and Minister of Native Affairs, J. Ballance; Attorney-General and Colonial Secretary, P. A. Buckley; Minister of Agriculture and Lands, Mr. Mackenzie; Minister of Mines and Defense, R. J. Seddon; Minister of Education and Justice, R. Reeves; Speaker of the House of Representatives, Major Stewart. The colony is rapidly recovering from the long period of depression that followed the failure of the City of Glasgow Bank, which was the result of inordinate land speculation, and threatened to bring about the forced sale of a large number of the private estates on the islands. The exports

of New Zealand produce increased from £6,707,805 in 1888 to £9,428,922 in 1891. The frozen-meat trade has nearly trebled in these years. The profits of the foreign trade in wool and mutton have caused a great quantity of land to be taken up for sheep farming. Still the people continue to emigrate to other colonies. Among the bills proposed to Parliament, which was opened on June 11, was one for the repurchase of private estates for the purpose of settlement. The Premier promised also to introduce a bill to deal with the labor question. The prospects of labor legislation and of restrictions to be imposed on capital cause even more concern to the conservative and wealthy classes in New Zealand than in other parts of Australasia. About one third of the members of Parliament owe their election to the labor vote, and their course in reference to labor measures is closely watched by delegates of the trade unions. Employers' associations in like manner exercise a control over representatives who are expected to serve their interests. The measures proposed by the Labor party, and adopted in part by the National Liberal Association, are strongly socialistic.

AUSTRIA-HUNGARY, a dual monarchy in central Europe, composed of the Empire of Austria and the Kingdom of Hungary, which have been politically independent, except in regard to common affairs, since the restitution of the ancient Hungarian Constitution after the war of 1866. The head of the house of Hapsburg is Emperor of Austria and King of Hungary. The standing army, the navy, the customs, foreign affairs, and other matters of common interest are administered by a common ministry, and supplies are voted by delegations from the parliaments of the two monarchies. The reigning Emperor-King is Franz Josef I, born Aug. 18, 1830, who succeeded to the throne Dec. 2, 1848, after the abdication of his uncle Ferdinand I. his father having renounced the crown in his favor. The heir-presumptive is the Emperor's brother, the Archduke Karl Ludwig, born July 30, 1833, whose son, the Archduke Franz, born Dec. 18, 1863, is next in succession. The Minister of Foreign Affairs and of the Imperial Household for the Whole Monarchy is Count G. Kalnoky, who succeeded Count Andrássy in 1881. The Minister of War for the Whole Monarchy is Field-Marshal Baron Ferdinand Bauer, appointed in 1888. The common Minister of Finance is Benjamin de Kallay, appointed in 1888.

Area and Population.—The area of the various provinces of the monarchy and their population, according to estimates made for Dec. 31, 1889, in Austria, and for a twelvemonth before in regard to the Hungarian dominions, are given in the table at the head of the next page.

The Ottoman provinces of Bosnia and Herzegovina, occupied and administered by the Austro-Hungarian Government in accordance with the Treaty of Berlin, had in the beginning of 1888 a total population of 1,404,000 souls.

The number of marriages registered in Austria in 1889 was 177,771; the number of births was 924,690; of deaths (excluding 26,340 still-born), 646,787; surplus of births over deaths, 251,563. In Hungary, Croatia-Slavonia, and Fiume the number of marriages in 1888 was 158,881; of births, 759,662, of which 14,026 were still-born; of

PROVINCES.	Square miles.	Population.
AUSTRIA:		
Lower Austria.....	7,654	2,666,546
Upper Austria.....	4,631	754,163
Salzburg.....	2,767	173,962
Styria.....	8,670	1,288,239
Carinthia.....	4,605	864,384
Carniola.....	3,566	604,047
Coast lands.....	3,084	708,726
Tyrol and Vorarlberg.....	11,324	929,371
Bohemia.....	20,060	5,851,312
Moravia.....	8,583	2,250,386
Silesia.....	1,987	602,297
Galicia.....	30,307	6,580,388
Rukowina.....	4,035	651,003
Dalmatia.....	4,940	629,850
Total Austria.....	115,908	23,895,888
HUNGARY:		
Hungary (with Transylvania).....	108,258	15,090,306
Croatia and Slavonia.....	16,773	2,127,829
Fiume.....	8	22,586
Total Hungary.....	125,039	17,180,971
Austria-Hungary.....	240,942	41,076,804

deaths (excluding still-born), 544,478; surplus of births over deaths, 215,184.

The emigrants from Austria-Hungary in 1888 were returned as 48,567, of which number 41,665 were destined for the United States and 2,333 for Argentina.

The population of the chief cities of Austria was estimated at the end of 1888 as follows: Vienna, 1,350,000; Prague, 304,000; Trieste, 160,000; Lemberg, 122,000; Gratz, 106,000. Buda-Pesth, the Hungarian capital, had 465,600 inhabitants in 1890.

Commerce.—The general commerce of Austria-Hungary for 1889 amounted to 578,000,000 florins of imports and 747,200,000 florins of exports, not including specie, as compared with 533,100,000 florins of imports and 728,800,000 florins of exports in 1888. The following were the largest imports in 1888: Cotton, 52,300,000 florins; wool, 37,900,000 florins; coffee, 32,800,000 florins; coal, 17,000,000 florins; woolen yarns, 16,500,000 florins; silk, 15,800,000 florins; leaf tobacco, 15,100,000 florins; hides, skins, and peltry, 14,500,000 florins; machinery, 14,200,000 florins; manufactured tobacco, 14,100,000 florins; cotton yarns, 14,100,000 florins; leather, 13,500,000 florins; silk goods, 10,400,000 florins; books, 10,200,000 florins; hardware and clocks, 10,100,000 florins; colors and tanning materials, 10,000,000 florins; woolen goods, 9,900,000 florins; cattle, 8,600,000 florins; grain, 5,200,000 florins. The chief exports in 1888 were of the following values: Grain, 95,500,000 florins; timber, 58,300,000 florins; sugar, 50,700,000 florins; hardware, 30,900,000 florins; flour, 29,500,000 florins; woolen goods, 24,900,000 florins; coal, 23,900,000 florins; wines, 21,600,000 florins; cattle, 19,300,000 florins; wool, 18,900,000 florins; glass and glassware, 17,000,000 florins; wood manufactures, 15,400,000 florins; paper manufacturers, 14,100,000 florins; feathers, 12,300,000 florins; poultry, 12,100,000 florins; gloves, 11,900,000 florins; iron manufactures, 11,500,000 florins; leather manufactures, 10,500,000 florins; silk manufactures, 9,100,000 florins; minerals, 8,900,000 florins; linen yarns, 8,000,000 florins.

The imports of precious metals in 1888 were

27,100,000 florins; and the exports, 12,200,000 florins.

The imports into Hungary from Austria and all other countries in 1888 were 446,631,000 florins, and the exports of Hungary were 444,383,000 florins, in total value. Cereals were exported in 1889 to the amount of 152,771,000 florins; cattle for 75,296,000 florins; and wines and liquors for 27,069,000 florins; the total value of exports for that year being 460,563,000, and that of imports 459,478,000 florins. The free cities of Trieste and Fiume, in which, under their ancient franchises, no duties were collected, except on the Government monopolies of tobacco, salt, and gunpowder, on July 1, 1891, were incorporated in the customs territory of the monarchy.

Navigation.—During 1888 there were 63,749 vessels, of 8,361,526 tons, entered and 68,634, of 8,357,598 tons, cleared at Austrian ports and 10,185, of 994,095 tons, entered and 10,150, of 997,167 tons, cleared at the ports of Hungary. Of the total tonnage about 82 per cent. was Austrian. The merchant marine of Austria-Hungary on Jan. 1, 1890, comprised 69 ocean steamers, of 81,870 tons; 102 coasting steamers, of 14,522 tons, and 9,851 sailing vessels of all sizes, of 160,799 tons. The Austro-Hungarian Lloyd Steamship Company, having become financially embarrassed, was in 1891 taken under the Austrian Government, which will appoint the president and be represented in the board of directors. By an agreement with the Hungarian Government, which has ceased all connection with the Lloyd Company, its steamers will monopolize the service to the Levant, India, and China, and the Hungarian Adriatic Company will have America for its field, except Brazil, which is open to both lines.

Railroads.—On Jan. 1, 1890, the Austrian Government owned 6,869 kilometres of railroads, but operated only 5,024 kilometres, while companies owned 7,814 kilometres and worked 9,659 kilometres. In Hungary the state owned 4,327 kilometres which it worked, and 4,117 kilometres which were leased to companies, while 2,256 kilometres were both owned and managed by private capital. The length of railroads in Austria was 14,683 kilometres, or 9,177 miles, and in Hungary 10,700 kilometres, or 6,700 miles. The total mileage increased from 11,206 in 1877 to 14,499 in 1885, and the capital expenditure from 2,761,152,000 to 3,475,203,000 florins. In 1890 the mileage was 15,877, not counting 342 miles in Bosnia and Herzegovina.

Posts and Telegraphs.—The number of letters carried in the Austrian mails during 1889 was 504,333,000; postal cards, 90,527,400; samples, circulars, etc., 60,195,500; newspapers, 93,000,000. The Hungarian post-office handled 135,739,000 letters, 37,207,000 postal cards, and 19,072,000 patterns, circulars, etc. The post-office in Bosnia and Herzegovina forwarded 6,793,000 letters and postal cards, 341,400 samples and circulars, and 876,400 newspapers.

The telegraphs in Austria had in 1889 a total length of 26,677 kilometres of line, with 73,003 kilometres of wire; in Hungary the length of line was 18,693 kilometres, with 47,919 kilometres of wire; in Bosnia and Herzegovina there were 2,806 kilometres of line, and 5,869 kilometres of wire. The messages for that year num-

bered: In Austria, 8,736,199; in Hungary, 4,211,141; in Bosnia and Herzegovina, 219,829.

The receipts from posts and telegraphs in Austria for 1889 were 29,530,836 and expenses 25,187,836 florins; in Hungary, in 1888 the receipts were 12,303,559 and the expenses 8,618,114 florins.

Common Finances.—The budget for common affairs in 1891 called for 117,290,284 florins for the army (including 14,450,439 florins of extraordinary expenditure), 11,344,533 florins for the navy (including 1,860,500 florins for extraordinary purposes), 4,861,100 florins for foreign affairs, 2,011,610 florins for the Ministry of Finance, and 126,710 florins for the Board of Control, making a total of 135,634,237 florins. The net proceeds of customs were reckoned at 40,669,500 florins, and receipts from the various ministries at 2,708,352 florins. In accordance with the last *Ausgleich*, Hungary pays 2 per cent. of the expenses after deducting the receipts, and what remains is apportioned—70 per cent. to Austria and 30 per cent. to Hungary. Hungary's 2 per cent. for 1891 is 1,845,127 florins, her quota of the remainder 27,123,377, and Austria's contribution 63,287,881 florins. The cost of administering the occupied Ottoman provinces for 1891 was estimated at 10,136,149 florins, which is covered by 10,187,450 florins of revenue, but does not include military expenses, for which the sum of 4,282,000 florins is allowed.

The general debt of the empire, owed in common by the two monarchies, amounted in 1890 to 3,122,010,000 florins, besides floating obligations represented by treasury notes to the amount of 411,994,644 florins, of which 323,140,194 florins are paper currency.

The Army.—The whole monarchy is divided into 106 military districts, 1 for each of the 102 infantry regiments, 1 for the Tyrolese Jäger, and 3 on the coast for the marine. Bosnia and Herzegovina are divided into 4 recruiting districts. The two Landwehrs, which have independent administrations under the direction of the Ministers of Defense of the two halves of the monarchy, recruit their 184 battalions of infantry and 16 regiments of cavalry from the same territorial districts as the regular army. Every regiment has four battalions, making 408 battalions of the line. Besides 12 battalions of Tyrolese rifles, forming the regiment furnished by Tyrol and Vorarlberg, there are 30 battalions of Jäger. There are 21 brigades of cavalry, of 2 regiments each; 14 regiments of field artillery, comprising 153 batteries of heavy and 28 of light artillery, 16 of mounted artillery, and 13 with mountain guns; 12 battalions of fortress artillery, of 6 companies each; 2 regiments of engineers, forming 52 companies in time of war; 1 regiment, forming 25 companies, of pioneers; and 1 regiment of 8 companies of railroad and telegraph troops.

The Landwehrs on the peace footing maintained 15,580 infantry and 11,892 cavalry, and for war can muster 407,684 infantry and 26,645 cavalry, and enrolled in the Landsturm were 441,122 men, making the total force of trained troops 1,449,483 infantry, 100,600 cavalry, 109,490 artillery, and 158,840 technical and other troops. The number of guns in peace time is 856, in war 2,008; the number of horses, 66,880

in peace and 274,060 in war. More than 4,000,000 men can be summoned into the Landsturm in case of war.

The strength of the regular army in 1891 was as follows:

TROOPS.	Peace footing.	War footing.
Infantry	196,233	600,677
Cavalry	58,714	78,955
Artillery	18,569	109,490
Engineers	10,143	47,609
Train	2,381	48,917
Sanitary troops	2,689	6,514
Staff, etc.	4,116	20,982
Establishments, etc.	15,945	39,818
Total	309,245	942,962

The Navy.—The armor-clad navy consists of 11 battle ships, of which the "Stephanie" and "Kronprinz Rudolf," launched in 1887, carried respectively two and three 48-ton guns, mounted *en barbette*, and the rest are central-battery ships, except one old broadside frigate. The steel ram cruiser "Kaiser Franz," steaming 18½ knots, will be excelled in speed by her sister ship, the "Kaiserin Elisabeth," and is already by some of the twelve new sea-going torpedo cruisers. The torpedo flotilla consists of 57 boats carrying machine guns, with which all the vessels of the navy are abundantly provided. There are 2 river monitors, 3 avisos, 4 training ships, 19 station and service ships, 6 harbor and coast-service ships, 9 school and barrack ships, and 4 hulks. The crews are recruited from the districts of Trieste, Fiume, and Zara.

Austria.—The Reichsrath, consisting of the Herrenhaus and Abgeordnetenhaus, legislates for the whole Cisleithan monarchy, conjointly with the Emperor, except in such matters connected with municipalities, taxation, agriculture, education, worship, charity, and public works as are reserved for the exclusive or concurrent legislation of the provincial diets or Landtage. The Austrian Cabinet is composed of the following ministers: Premier and Minister of the Interior, Count Edward Taaffe, appointed Aug. 19, 1879; Minister of Education and Ecclesiastical Affairs, Dr. Paul Gautsch von Frankenthurn; Minister of Finance, Dr. J. Dunajewski; Minister of Agriculture, Count Julius Falkenhayn; Minister of Commerce and National Economy, Marquis von Baequehem; Minister of Defense, Field-Marshal Count S. von Welsersheimb; Minister of Justice, Count Friedrich von Schoenborn; without portfolios, Baron von Prazak and Ritter von Zaleski.

Finance.—The receipts of the Austrian Government for 1890 were estimated as follows:

SOURCES OF REVENUE.	Florins.
Council of Ministers	718,800
Ministry of the Interior	1,159,201
Ministry of Defense	264,156
Ministry of Worship and Education	5,900,204
Finance administration	3,159,910
Land tax	35,310,000
House tax	31,472,000
Industrial tax	11,103,000
Income tax	25,394,000
Customs	87,291,000
Excise	102,369,600
Salt	20,679,800
Tobacco	82,391,800
Stamps	18,900,000
Judicial fees	38,770,000
Lottery	21,500,000

SOURCES OF REVENUE.		Florins.
Other indirect taxes.....		3,800,820
State property.....		2,505,558
Post office and telegraphs.....		80,877,250
Railroads.....		48,550,650
Other receipts of Ministry of Commerce.....		829,180
Forests and domains.....		4,098,727
Mines.....		7,124,550
Other receipts of Ministry of Agriculture.....		678,655
Ministry of Justice.....		901,700
Miscellaneous.....		606,419
• Ordinary revenue.....	580,606,955	
Extraordinary revenue.....	18,212,051	
Total revenue.....	548,820,006	

The estimates of expenditure for the same year were of the following amounts:

HEADS OF EXPENDITURE.		Florins.
Imperial household.....		4,650,000
Imperial Chancery.....		74,978
Reichsrath.....		722,489
Supreme Court.....		22,600
Council of Ministers.....		1,042,487
Ministry of the Interior.....		16,595,225
Ministry of National Defense.....		18,497,066
Ministry of Worship and Education.....		1,452,400
Public worship.....		6,793,100
Education.....		12,882,048
Ministry of Agriculture.....		12,058,958
Ministry of Finance.....		84,135,878
Ministry of Justice.....		50,387,900
Ministry of Commerce.....		68,570,420
Board of Control.....		167,700
Interest and amortization of debt.....		143,797,185
Management of debt.....		886,760
Pensions and dotations.....		18,798,180
Quota of common expenditure.....		96,769,719
Ordinary expenditure.....	497,759,978	
Extraordinary expenditure.....	48,548,062	
Total expenditure.....	546,808,085	

Austria's special debt, contracted since 1868, which amounted to 332,244,000 florins in 1875, had grown to 681,099,000 florins in 1885, and in faster progression since to 1,128,483,000 florins in 1890.

Political Crisis.—Count Taaffe's attempt to reconcile the Germans and the Czechs on the basis of the formal compact, or *Ausgleich*, arrived at in January, 1890, was brought to naught by the agitation of the Young Czechs, who won over to their camp the entire Czech nation, leaving powerless the Old Czechs, who were to carry out the agreement. In the autumn session of the Bohemian Diet the question of the official language was brought into the debate with such effect that a fresh defection of Old Czech deputies left the Government without the sufficient majority to carry the clauses in the *Ausgleich* relating to the division of the Diet into national sections, or *curiæ*, which was the most important part of the compromise. Not even the law to divide the Agricultural Council into national groups could be carried. The impossibility of reconciling the German and Czechish extremists, the pretension of the Clericals to arrogate to the Church the entire control over education, and the desirability of granting a fair degree of recognition to the Ruthenian, Italian, and other smaller nationalities impelled Count Taaffe to end his relations with his former political allies and look for a new combination of the moderate men of all groups in another Reichstag. The old one had not long to run, the legislative period ending in June, 1891, and the majority showed signs of disorganization. On Jan. 25, 1891, all the parties were surprised by the publication of a decree dissolving the House of

Deputies and ordering new elections to take place in the beginning of March. On Jan. 22, when the new programme was settled at a Cabinet council, M. de Dunajewski, the most prominent Nationalist, or home ruler, in the ministry, tendered his resignation, and on Feb. 4, on his insisting on immediate retirement, it was accepted, and Dr. Emil Steinbach, previously Chief Secretary of the Ministry of Justice, was appointed Minister of Finance in his place. The selection of a man who had taken no part in party politics, and who, by a recent lecture directed against individualism and capitalism, had acquired the reputation of a Socialist, showed Count Taaffe's desire to make the Cabinet independent of parties, and to combat revolutionary Socialism with a programme of Socialistic legislation. The Social Democrats went into the electoral campaign for the first time with a platform of principles and a regular party organization. The Anti-Semites were joined by Prince Alois Liechtenstein, the Christian Socialist, who dropped his Clerical platform and appealed for the support of all the Anti-Semite groups.

The Elections.—The result of the elections disappointed the expectation that a new policy of compromise could be carried out by a coalition with the German Liberals, who had for twelve years formed the bulk of the Opposition. The defeat of the Old Czechs, who lost 36 seats to the Young Czechs, and were reduced to 10, broke up the former majority, and Count Taaffe continued his negotiations with the German Liberals, but their diminished strength did not warrant the Minister-President in giving them the influence they expected. They held 110 seats in a House of 353, having lost 16 to the German Nationalists and 15 to the Anti-Semites, and of the latter 7 were in Vienna, their old stronghold. The classification of the new Chamber, according to parties and national groups, was as follows: German Left, 110; German Nationalists, or Democrats, 16; Anti-Semites, 15; Poles, 57; Ruthenians, 8; Young Czechs, 36; Old Czechs, 10; Independent Czechs, 3; Left Center, 8; Clericals, 31; Slovenians and Croats, 23; Bohemian Feudal Conservatives, 18; Moravian Czechs, 5; Italians, 9; German Conservatives, 2. Except in Bohemia and German Austria, Conservative principles had been victorious, and the complexion of the new Reichsrath indicated the retention of Count Taaffe at the head of the Government and the continued exclusion of the German Liberals from the control of the Government's policy, for even the radical Young Czechs would give their support to any ministry rather than one that threatened to revive the centralistic features of the Liberal programme. The Poles, who contain Liberals as well as Conservatives in their ranks, but who vote in a solid group, were willing to coalesce with the German Liberals if Count Hohenwart's Federal Conservatives were taken into the league, but these, and the old feud between these and the German party, could not be composed.

Session of the Reichsrath.—Count Taaffe, who, as Prime Minister, is responsible to the Emperor, and not to Parliament, was compelled to meet a Chamber in which he had no pledged supporters besides the small group of Moderate

Conservatives. When Parliament opened there was no precedent of procedure for a situation so anomalous. A fierce and protracted debate over the addresses in reply to the speech from the Throne was in prospect, when Dr. Smolka, the President, left the chair to convey to the House Count Taaffe's plain admission that he had no majority, and to beg that controversial matters be waived and the address confined to a simple expression of thanks to the Throne. This proposal was unanimously agreed to, the Young Czechs alone reserving the right to bring forward their special grievances on some future occasion. Notwithstanding this, they were taunted by the Old Czechs, who are as strongly Nationalistic as themselves, but are Conservatives instead of Democrats. The speech with which the Emperor had formally opened the Reichsrath on April 11 contained a copious list of legislative proposals. Vienna was promised a metropolitan railroad. Notice was given of the purchase of several private railroads by the Government. Credits were required for the embankment of rivers to prevent floods. A project for the compulsory insurance of dwelling houses against fire was mentioned. The reduction of freight rates on state railroads was recommended. The codification of the criminal laws and reforms in civil procedure were declared to be urgent. The establishment of a medical faculty in the University of Lemberg was announced. The lapsing treaties of commerce the Government aimed to renew simultaneously and for a long term of years. An appeal was made to the parties to co-operate harmoniously. The international situation was said to justify belief in the wish of all European states to live in peace one with another. Before the general discussion of the budget, which took the place of the debate on the address, was concluded, Count Taaffe succeeded in welding together a working majority, consisting of the Poles, the German Left, and about 30 Moderate Conservatives. No change in the Cabinet was made during the summer session, which ended on July 16. One of the reforms in criminal procedure proposed was to give the courts power to try cases of extortion with closed doors, in order that victims of blackmailers may not be deterred by the dread of publicity from making complaints. The question of indemnifying persons unjustly condemned was made the subject of a debate. The system of civil procedure in Austria has long been admitted by every one to be faulty, but lawyers can not agree on the best system to be adopted. The Minister of Justice introduced bills to remove some glaring defects in the existing laws.

The prospect of the admission of German Liberals into the councils of the Government intensified the irritation of the Young Czechs, who embraced the occasion of the National Bohemian Exhibition, held during the summer at Prague, to organize Pan Slavist demonstrations. The Germans of Bohemia had already attached a political character to this exhibition of Bohemian products by ostentatiously abstaining from taking part.

The Labor Question.—The Socialistic working-men's party polled very few votes in the general election. The 1st of May passed without disorder, though many meetings were held in

Vienna and elsewhere, at which an eight-hour law, universal suffrage, and a free press were demanded. Strikes had broken out in the coal mines of Silesia, which were followed in a few days by riots that were suppressed by the troops. On June 9 the exceptional law of 1884, authorizing the Government to make domiciliary searches, confiscate letters, dissolve meetings, and order arrests without judicial warrant in Vienna and the suburbs of Wiener Neustadt and Kronenburg was abrogated by imperial decree, though the right of trying persons accused of revolutionary offenses by special tribunals without a jury was continued in force.

Hungary.—The Hungarian Parliament legislates for all the dominions of the crown of St. Stephen and for Croatia-Slavonia except in matters reserved for the Provincial Diet. It is composed of the House of Magnates, reformed in 1885, and the House of Representatives, consisting of 453 deputies elected for Hungarian districts and municipalities by direct suffrage, and 40 delegates for Croatia and Slavonia. The ministry, which is responsible to Parliament, is composed of the following members: President of the Council, Count Julius Szapary, who assumed office on March 7, 1890, as the successor of Koloman Tisza; Minister of Finance, Dr. Alexander Wekerle, appointed April 9, 1889; Minister of National Defense, or Honved Minister, Baron Geza Fejervary; Minister *ad latus*, or near the King's person, Ladislaus de Szögyenimarich, appointed in December, 1890; Minister of the Interior, Count Julius Szapary, appointed in April, 1890; Minister of Education and Public Worship, Count Albin Szaky; Minister of Justice, Desiderius de Szilagyi, appointed April 9, 1889; Minister of Industry and Commerce, Gabriel de Baross, appointed Dec. 21, 1886; Minister of Agriculture, Count Andreas Bethlen, appointed in April, 1889; Minister for Croatia and Slavonia, Emerich de Josipovich, appointed Aug. 23, 1889.

Finance.—The budget estimates for 1891 give the revenue from the different branches of the Administration as follows:

SOURCES OF REVENUE.	Florins.
State debts	4,491,579
Accountant-General's office.....	1,895
Ministry <i>ad latus</i>	600
Ministry of the Interior	1,136,870
Ministry of Finance.....	272,791,448
Ministry of Commerce	69,896,086
Ministry of Agriculture	13,062,918
Ministry of Worship and Instruction.....	1,000,684
Ministry of Justice.....	792,958
Ministry of Defense.....	315,300

Ordinary revenue.....	363,490,338
Transitory revenue	5,518,245

Total revenue..... 369,008,583

The expenditure under various heads for 1891 was estimated as follows:

HEADS OF EXPENDITURE.	Florins.
Civil list.....	4,650,000
Cabinet Chancery.....	75,252
Parliament	1,265,310
Quota of common expenditure.....	28,573,985
Pensions	6,738,208
National debt.....	119,524,751
Guaranteed railroad debts.....	10,773,313
Guaranteed interest.....	1,854,566
Administration of Croatia	6,254,325
Accountant-General's office.....	110,100
Minister-Presidency.....	836,180

HEADS OF EXPENDITURE.	Florins.
Ministry of <i>ad latus</i>	54,120
Ministry for Croatia.....	36,050
Ministry of the Interior.....	11,406,215
Ministry of Finance.....	60,676,654
Ministry of Commerce.....	50,898,714
Ministry of Agriculture.....	13,066,505
Ministry of Worship and Instruction.....	7,294,065
Ministry of Justice.....	12,694,562
Ministry of Defense.....	11,008,915
Ordinary expenditure.....	342,571,190
Transitory expenditure.....	8,130,672
Investments.....	1,781,737
Extraordinary common expenditure.....	6,520,944
Total expenditure.....	369,004,543

Hungary's special debt has grown from 719,544,000 florins in 1875 to 1,582,259,000 florins in 1890.

Parliamentary Session.—The time of Parliament was largely taken up in the session of 1891 with a determined struggle over a Government bill to reform the administration of counties. The bill was approved by the great land owners, although it curtailed their privileges, and by many of the champions of popular rights, because it was designed to reform gross abuses in the local administrations and in the electoral system. Under the feudal arrangements that have obtained hitherto, the landed gentry, large and small, have had full control of the local government in their districts, the selection of the county officials, nominally elective, and a decisive influence in national elections. The Government proposed to make the chief county officers and the magistrates nominees of the Crown. The responsible leader of the Opposition supported the principle of the bill, but the extreme Opposition, composed largely of the petty nobility, whose prerogatives were at stake, denounced the measure as an attempt to destroy the electoral franchise by giving the Government power to put electioneering agents in the chief local offices, and also as the abrogation of ancient rights of local self-government. Count Szapary gave a public promise that as soon as the bill was passed he would introduce another to secure full freedom of voting. Count Apponyi expressed himself as satisfied with this pledge. The extreme Opposition declared that they would not let the bill pass without the insertion of electoral safeguards. One of their demands was that disputed elections should be decided by the law courts, and not by the Parliament; and the Prime Minister promised to bring in a bill to accomplish this, and to establish a tribunal for the settlement of disputes between the authorities and private persons. The Administrative Reform bill was introduced before the close of May. A week was consumed in discussing its title, several weeks were spent in debating its principle, and three more were given up to the first clause. Ten substitute bills were offered by members of the Opposition for the mere purpose of obstruction, which was continued after the Government had redeemed its promises by offering bills to remove the trial of electoral petitions to the Supreme Court, and to forbid official activity in elections and insure the freedom of the popular vote. The latter measure disqualifies candidates and disfranchises electoral districts for bribery, but allows a certain liberty in treating, on the plea that to rural voters who are

brought a long distance from their homes some accommodation should be given. The bill, which runs for eight years, contains a clause, intended to check the growth of the Socialist and Anti-Semitic movement, which disqualifies a member who within three months previous to his election shall in speech or print have excited to hatred against nationalities or creeds or denounced the institutions of marriage or property, or promised a general distribution of public property or private wealth. To influence the debate, Deputy Ugron, of the Extreme Left, quoted what he said was the secret oath taken by Hungarian Cabinet ministers, an antique formula pledging absolute obedience and devotion to the monarch. There was no hope of passing the 278 clauses of the Administrative Reform bill, and when the principle of the bill had been approved by a vote of 188 to 88, the ministry resorted to an unusual expedient. On Aug. 4 Count Szapary announced the withdrawal of the original bill and the substitution of another, consisting of two clauses—the first empowering the Government to appoint certain classes of county officials, and the second authorizing the Government to adopt such regulations in regard to the details of the new county government as in its discretion seem best. Count Albert Apponyi and the Moderate Opposition pronounced this device unconstitutional; but Count Szapary persisted, and succeeded in carrying the substitute bill by the vote of the Liberal majority on Aug. 9. The other business of the session was got through with, and on Aug. 17 the Parliament was prorogued, to meet again on Oct. 3, preparatory to the assembling of the delegations in Vienna.

Postal Congress.—The fourth congress of the Universal Postal Union met at Vienna on May 20, 1891, and dissolved on July 4. The treaty arrangements between the members of the Union respecting rates of postage and charges for forwarding mails by ship or land conveyance, were revised and consolidated in a new convention that will go into operation on July 1, 1892. To secure the entrance into the Union of the Australasian colonies, the Congress offered to accord to them the position of separate states, which was already enjoyed by the Indian Empire and the Dominion of Canada. On their account also the question of reducing both letter rates and transit charges was put aside to be considered by the next congress. In regard to this question some of the plenipotentiaries expressed themselves in favor of abolishing all charges for forwarding mails between countries belonging to the Union by the sea or land service of a third country and of establishing a single uniform rate of international postage. An innovation in international rates and arrangements was the rule adopted that every country of the Union shall henceforward supply the public with post cards with prepaid replies. It was further decreed that recipients of underpaid letters must not be charged more than the full rate of postage. Another rule was laid down that when countries charge a higher rate than 5 cents a half-ounce for letters sent over the sea, they must make the rate uniform for all destinations that are reached under equal conditions. This will affect Great Britain, from which the postage to British colonies has been 2½ d., but to

foreign countries similarly situated 4*d*. A regulation that benefits Great Britain more than other nations legalizes the practice, that has existed only by international courtesy, of forwarding closed mail bags to ships of war on foreign stations. Postal cards of one country posted in another will not, as heretofore, be suppressed, but will be forwarded and delivered to the addressee as unpaid letters, on which letter postage is to be collected. Hereafter letters can be posted on board mail packets by affixing stamps of the country to which the ship belongs, unless she is in port, in which case it must be the stamp of the country to which the post belongs. The post-office in East India and some other countries not only forwards consignments of merchandise in suitable packages, but the price payable on delivery may be collected by the letter carrier and remitted through the post-office to the consignor. The international mail service has now been made available for this purpose to countries that have adopted or shall adopt this custom. The practice of stamping the name and address of the sender on the address side of a postal card gains space for a longer communication on the blank side. By a new regulation the signature and address may be written. Till now correspondence in transit to countries outside the Union has been charged so much per letter; but by the new treaty the Union countries agree to transmit mails to non-Union countries at an average rate for sea transit, to be fixed at triennial periods on the basis of the statistics of traffic, as in the case with Union correspondence. This change will enable the countries of the Union to establish moderate uniform rates of postage to all places outside the Union. The maximum dimensions of packets of merchandise, samples, patterns, specimens, etc., admissible to the mails have by a former rule of the Union been 20 centimetres in length, 10 in width, and 5 in thickness, or approximately 8 by 4 by 2 inches. By a special arrangement between the United States, France, Great Britain, Italy, Belgium, Switzerland, Portugal, Greece, Luxemburg, Argentina, and Japan samples could pass between those countries in packages not exceeding 30 by 20 by 10 centimetres, or 12 inches in length, 8 in width, and 4 in thickness, and of the maximum weight of 12 ounces. These larger limits of size have been adopted for the whole of the Union, though the conventional limit of weight remains 8 ounces. The representatives of countries in which wine, oils, indigo, madder, and other dye stuffs and substances that might escape and damage letters were unsuccessful, as they had been at the previous congress at Lisbon in 1885, in securing the admission to the letter mails of samples of such articles, which must continue to be sent by parcel post to countries that exclude them from their letter mail bags. In some countries the law makes the postage on unpaid or insufficiently prepaid mail matter, when it has not been collected from the addressee, recoverable from the sender. The

convention binds the governments of countries of the Union to introduce such a law if they have not one already in force. Reciprocity was also arranged for, after a long discussion, in regard to the detection and punishment of frauds on the postal revenue by means of counterfeit or cleaned stamps. The plenipotentiaries undertook in behalf of their Governments to have a measure for the punishment of forgery of foreign stamps presented to their respective legislatures. The Congress discussed details of internal postal administration, and revised and elaborated the former agreements relative to the international parcel post, money orders, registered letters, the collection of bills and drafts, subscription to newspapers and periodicals, and certificates of identity for travelers. The rate of payment for international money orders was fixed at 1 per cent., and for small sums the minimum charge was reduced from 40 to 20 pfennigs—that is, 10 cents. The limit was raised from 500 to 1,000 francs. A clearing-house scheme for the adjustment of balances of postal accounts through the medium of the International Bureau at Bern was adopted at the suggestion of the German Postmaster-General. Mr. Wanamaker's idea of an international postage stamp, offered without preliminary notice and without the elaboration of a working scheme, was regarded as impracticable, in view of the difficulties arising from differences in currency and variations in the rates of exchange. One of the advantages would be that it would enable a writer to inclose a stamp in his letter, and thus insure a reply without putting a foreign correspondent to expense for postage. The British and the Indian delegates suggested plans for furthering this feature of the scheme by means of prepaid reply stamps on the principle of return post cards, and the British delegate moved to refer these proposals and the American scheme, in so far as it related to prepaying the answer to a letter, to the International Bureau for examination. The chief of the German postal administration, Dr. von Stephan, being opposed to the least step toward removing the sentimental barriers between nations, argued strongly against this motion, which was rejected. It is not unlikely that a reply-paid postage stamp may be instituted in the postal intercourse between the United States, the United Kingdom, the British colonies, and India. Throughout the session of the congress the delegations from the United States and Great Britain generally approved and worked for the same objects, and were supported by the representatives from India and Canada, and, in most cases, by the Egyptian delegate, although it had been suspected in the beginning that the refusal of England to organize sorting offices on mail steamships, such as have been instituted for the convenience of the American postal authorities on the German packets, might lead the American delegates, William Potter and Capt. Brooks, to favor Germany's side in contentious questions.

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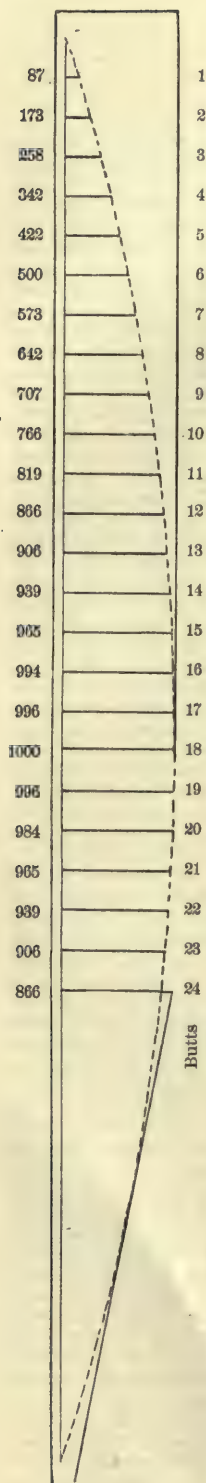
BALLOONING, MODERN. Practical ballooning comprises both the manufacture and the use of balloons. There are two kinds of balloon—the hydrogen or gas balloon, and the Montgolfier or hot-air balloon. The former is the most important, and claims the greater part of our attention here.

A complete hydrogen balloon consists of the gas envelope and valve, netting and ropes, wicker car, concentrating ring, and anchor, to which may be added a drag rope and a collapsing cord. For inflation pure hydrogen gas is used, also carbureted hydrogen or coal gas, and sometimes water gas. Sand bags are required to retain the balloon in position during inflation, and more or less sand is usually carried in the car as ballast. Every aeronaut should be capable of making his own balloon, but, in the almost total absence of practical information, most of them become old before learning all that is necessary on the subject. Silk, linen, or cotton, or combinations of these, are the fabrics we have to deal with for the manufacture of the envelope or gas holder. The best of these is silk, of which there are many kinds that answer equally well. Linen, at first sight, would seem to be the next best material for balloon construction, but experience has proved otherwise; the fabric is heavy, and becomes hard and brittle when varnished, and a balloon made of it is continually breaking into holes. Cotton, of various weights and makes, is most in use, because it is cheap, will last as long as the oil varnish, and answers every purpose in ordinary ballooning. Strength is obtained by using the heavier qualities, and almost any degree of lightness may be had by using the finer grades. The best heavy cotton for this purpose is the bleached Wamsutta sheeting. It is a common error to suppose that unbleached cotton is more suitable for the purpose than bleached. It is possible that a half-bleached cloth might be stronger, but the sponginess of unbleached goods is detrimental to their use. Wamsutta, however, on account of its weight, is suitable only for very large balloons. Lonsdale sheeting is lighter and better adapted to medium sizes. Lonsdale cambric is still lighter, and may be used for balloons of twenty-five or thirty thousand cubic feet capacity. The proper shape of balloons for economy in material, weight, and gas, as well as for facility in management, is globular, and consequently we shall consider no other.

The first thing in order is to ascertain the quantity of cloth required, which may be done in the following manner: To determine the number of breadths, divide the circumference in inches by the number of inches in width of material, deducting one inch for each seam. The length of the gores will be equal to half the circumference. Multiply the number of breadths by the number of yards in the length of a gore; deduct one fourth of the product, and the result will be the total quantity in yards required to make the balloon. The following rules will be

found useful in determining the size of the balloon required. To obtain the number of cubic feet in a sphere, multiply the surface by one sixth of the diameter. To determine the number of square feet in the surface of a sphere, multiply the diameter in feet by the number of feet in the circumference.

The Pattern.—For a pattern use manilla roll paper of sufficient length and width. At one end of the paper write "tip," and at the other "neck": then draw the following lines: First one running from end to end, an inch from one of the edges. Measure from tip to neck the exact length of the gore as previously calculated, and add three inches for loss by seams. Divide, with a pair of compasses or other convenient instrument, the whole length into thirty-six equal parts, and draw lines across the paper at the points of division. Then take a strip of paper or wood one inch wide and one inch less in length than the width of the paper or the cloth, and with a pencil make a measure by dividing the strip into ten equal parts; subdivide these each into ten parts; and, lastly, divide these subdivisions each into ten parts. Thus we shall obtain a scale of one thousand parts. For convenience we shall call the divisions on the scale "marks," counting from 1 to 1,000. With this measure we can determine the points through which the curve line of the pattern must pass. Place the end of the scale or measure at the line first drawn, one inch from the edge of the paper, near the tip end and beside line No. 1. The length of this line to the point through which the curve passes will be 87 marks; with a pencil make a cross at the point, and proceed to line No. 2, which will be 173 marks in length, and so on, connecting afterward the points thus marked by a curve line. If the balloon is to be made perfectly round, with a cylindrical neck attached, the pattern must be pointed at both ends; but if it is to be slightly elongated at the bottom, with a gradual development of the neck, the pattern is extended in length and the curve gradually turned outward, as in the diagram. The pattern must be cut along the curve line. Lay out the cloth on a long table, and cut into lengths of a little over two thirds that of the pattern, or exactly eight inches below line 24, and call the end the "butts." Lay the pieces successively one upon another until all are down, taking care that the edges on one side are kept even. On the cloth thus arranged lay the pattern even with the butts, and after putting weights upon it proceed to cut, with a knife and straight-edge, through all the layers at once, continuing from point to point along the curve. After cutting it will be necessary, for the guidance of the sewers, to mark with a pencil each layer of the cloth, on both edges, at the ends of the cross lines from 1 to 24. The pieces cut from the tip to the equator are to be readjusted with the broad ends evenly matched and their edges arranged as before. Reverse the pattern and place line 12 at the butts, and with the



knife trim off the surplus, leaving the curve already formed in the cloth to serve for the neck, or altering it to suit the taste. Mark this portion for the sewers the same as the upper part. Before the pieces are lifted from their places they must all be marked with cross lines at double the distance of those on the pattern, beginning at the center (line 18) and working each way, using the marks on the edges as guides. Along these cross lines are to be sewed the stays, which give additional strength to the balloon. After marking half of the layers from tip to neck, the remainder must be turned over and marked on the reverse side.

The breadths are now ready for sewing into gores, each gore being two breadths in width. The cross lines represent the interior of the balloon, and a breadth taken from the first and another from the second set of markings are matched, when their straight edges are to be sewed together with the cross lines inside facing each other. The seam is made by first sewing through the two thicknesses about half an inch from the edge, then the breadths are opened, the seam laid over to the right, tucked in, and hemmed down. The sewing must always be done from the tip downward.

Having joined all the pairs of the upper set by sewing their selvages together, do the same by the lower set; but in this case begin the sewing always at the broad end, working toward the neck. The gores may then be sewed together by adding one gore after another, until half of them have been joined, then put the others together in the same way, always beginning at the tip end for the upper part, and at the broad end of the lower part. This will result in two upper and two lower

parts. The sewing on of stays and collapsing cord are next in order. The stays are made from strips of the balloon material folded to three thicknesses, forming a tape about half an inch in width. These tapes are sewed along the marks prepared for them; but care must be taken not to vary the relative position of the balloon while sewing, otherwise the ends of the stays will not match on the opposite sides. Keep the tip of the top parts to the right hand, and the broad or butt end of the lower parts to the right. The "collapsing cord," or "rip line," is made by sewing a strong cotton cord about one eighth of an inch thick to a strip of the balloon material about 4 inches wide and several yards in length, according to the size of the balloon. About 7 yards will answer for a balloon of 25,000 cubic feet capacity. The cord is sewed along the middle of the strip to within an inch or two of either end, the surplus cord remaining attached. The sewing of the cord to the strip should be made with No. 8 cotton, well waxed, doubled, and back-stitched on, for this stitching is depended upon for tearing the strip when occasion requires. The strip is to cover the cord and to be sewed on the outside of the balloon, beginning at the butts and running upward along the side of one of the straight seams. Both edges and the two ends of the strip are to be sewed down; but before the upper end is closed the surplus cord must be passed through a hole to be made for the purpose, to the inner side of the balloon. A portion of the surplus cord is sewed zigzag in a bag or pocket 6 inches wide and 3 feet long, which is to be stitched on the inside of the balloon just above the hole made to admit the cord. The cord, suspended from this bag, can hang loosely or be slightly tacked along one of the seams down through the neck of the balloon. The zigzag cord in the bag diminishes the danger of any accidental jerk tearing the balloon, as the cord must tear entirely from the bag before a rupture takes place.

Both the stays and the collapsing cord may be dispensed with by those who choose to take the risk, for they are not in general use; but the stays prevent any accidental tear extending the whole length of the balloon, while the collapsing cord, though seldom needed, is a remarkably good thing when the necessity for its use occurs.

If ornamentation is intended, this is next in order. Letters, stripes, scrolls, festoons, pictures—anything—may be painted on without the least injury to the fabric, and any kind of ornamentation is far more agreeable to the eye than the naked cloth. The colors should be well selected, and may consist of stains or finely ground pigments. Carmine makes the finest crimson, and should be dissolved in water with the addition of a little ammonia. Soluble blue gives light or dark shades. Ultramarine blue is a very bright color, and mixed with other pigments is useful, particularly in forming a stable purple with Indian red. Chrome yellow, chrome green, raw and burnt sienna, lamp-black, and well-powdered bone-black, may all be used to produce the tints required; but care must be taken never to use vermilion, on account of its decomposing action upon the oil varnish. Umber should be used very sparingly, if at all, as it becomes hard

and liable to crack. These colors should be mixed with starch of about the consistency of that used in the laundry, and the combination is best made while the starch is hot. The colors may be applied with broad, flat brushes, though almost any kind of painter's brush will answer, and where the same figure is to be repeated many times stencils cut from oiled or varnished paper may be used.

The ornamentation completed, all the parts are to be joined together. First the lower ones are to be sewed to the upper portions by a cross seam at the buttings, taking care to match all the seams to one another perfectly. This done, the two halves only remain for closing. Heretofore all the seams have passed over the sewing machine in a continuous way from front to back, while the closing seams are done by bringing forward small portions at a time from behind the machine. Begin by sewing at the tip on the first row, but only 2 yards before turning over and sewing down the reverse side, join together such stays as have been included, continue the sewing, reversing and joining the stays 2 yards at a time all the way down, and then treat the last seam in like manner, beginning at the tip and sewing downward. The top of the balloon should be lined with an extra thickness, 6 to 8 feet across. At the junction of the seams a round hole is to be cut to admit the valve. A disk of leather having an upright collar attached, and resembling a broad-brim hat without a crown, is stitched on around the opening, ready for the introduction of the valve.

The Varnish.—The balloon must be coated with some suitable material for closing the interstices of the fabric, to give it gas-retaining qualities. A nearly perfect skin, or film, is aimed at, and this may be obtained in various ways, but the only materials that seem practically suited to this purpose are linseed oil and India rubber. The former is by far the easiest of application, while the latter makes much the lightest weight balloon. Linseed oil is brought to the right consistency for forming a flexible varnish of quick-drying properties by prolonged heat or long exposure and frequent stirring in the open air. Fine, limpid oil, made from Calcutta seed, gives the best results. A copper kettle must be used for the process, as iron is liable to oxidation, which ruins the varnish. The kettle must not be filled by at least one fifth of its capacity, as the oil swells with the heat and is liable at certain stages to foam. The kettle may be permanently fixed and the fire made movable, or the kettle may be movable and the fire a fixture, but one or the other is necessary. The heating should be governed by the aid of a thermometer, and must never be allowed to rise to 500° F., as it is liable to burst out into flame; but it may be allowed to rise to 400° with safety, and if run at this heat for twenty-four hours will be sufficiently done to answer the purpose. When cool it will be as stiff as the thickest molasses in cold weather, and quite stringy when tried between the thumb and finger. Constant stirring while over the fire is beneficial, and the oil should never be covered except to raise the heat to the required degree. At 212° the water contained in the oil boils off, and later, as the heat rises, a liver-like substance is formed in the oil, unless it

is kept stirred, but this substance redissolves, and need cause no uneasiness. No addition to the oil seems to be of the slightest advantage, and the purer it is kept from all contamination the better it is. A slight addition of sulphur prevents foaming and allows the raising of the heat to a greater degree, but the addition of sulphur would be likely to cause a corrosive action on the fiber of the balloon.

The thick oil varnish is to be thinned down when wanted for use by the addition of benzine until it will sprinkle freely through a watering pot with a tolerably fine rose.

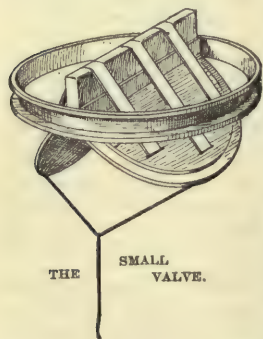
The balloon is now stretched out at full length, and folded one breadth upon another. When this has been accomplished, take the watering pot and sprinkle the top layer, using judgment as to the quantity required to give the first coating. When this is done, turn over the first layer, treating the subsequent ones in like manner, until all have been sprinkled. Then, while it is still wet with the mixture of benzine and oil, begin at the tip end and roll the balloon up tightly. Give it an occasional turn over, so that the diluted oil may permeate every part. These operations must not take place in the sun, or it will not be safe to roll up the balloon, for fear of spontaneous combustion. After the lapse of several hours the balloon may be unrolled and opened, when the oil will be found well soaked through the entire fabric. If any bare places show themselves, they are readily covered. Drying in the shade is to be preferred when time is no object; but when it is, the sun accelerates the process. The first coating should have time, if possible, to season in the shade after it has been dried in the sun, as spontaneous combustion is less likely to occur when the first coat has had time to harden. The subsequent coats may be put on in the same manner as the first, or the work may be hastened by two men following the sprinkler with soft brooms, for the purpose of distributing the oil equally to every part. As many as four coats will be required to make the balloon sufficiently gas tight.

Spontaneous Combustion.—It should be understood that oil varnishes, when applied to fabrics of any kind, are liable to spontaneous combustion, the tendency being increased when the drying has been done by artificial heat, or in the sun. This liability passes away in a few weeks, but until the seasoning has taken place, it is extremely unsafe to remove the balloon any considerable distance, even when it is packed loosely, unless steps have been taken to counteract the difficulty. There is no danger of heating when the balloon is extended at full length in the shade. But when it is rolled up tightly, even if left in the open air, charring will surely take place in a few hours. Where shipment is necessary, it has been found that sprinkling the balloon over with some of the lighter products of petroleum, as, for instance, kerosene, or a mixture of this with benzine, is a sure preventive of spontaneous combustion. After seasoning has taken place, which may be determined by rolling up tightly and carefully observing the result, the balloon may be packed away with safety.

Rubber-coated Balloons.—Balloons made impermeable by India-rubber may consist of one or more thicknesses of silk or cotton, and the

strength of material and imperviousness may thus be increased to any desired extent—for this reason, rubber is the only suitable substance for coating balloons of extraordinary dimensions. The great Giffard balloon of the Paris Exposition was made of several layers of cambric and rubber cemented together. To prepare the rubber solution, sheets of the elastic material are suspended in barrels or cans containing benzine, and a few hours will suffice to soften the gum so that it may be stirred into a pasty mixture. To this is added, from time to time, minute doses of bichloride of sulphur in benzine, taking several days for the operation, at the end of which time the proper coagulation may have taken place. This rubber solution is applied, by means of a spreading-machine, to the cloth before cutting. Each coat is slightly dusted with steatite, to give more body, and when enough coats have been laid on, it may be taken from the machine and rolled up. If it is to be used singly, it is ready to be made into a balloon; but if it is required to be doubled, the surface is left in a sticky state and the faces of two pieces are pressed together. The cost of rubber coating exceeds that of oil varnishing; but some advantage is gained in lightness and lasting qualities.

The Valve.—The imperfection of the balloon valve seems to have been a considerable source of annoyance, even to the French aeronauts, who frequently mention the “catapasm,” or poul-



tice, with which they are in the habit of stuffing their wooden valves to make them gas tight. This seems a barbarous mode of procedure, which is indeed unnecessary, for a valve can be made of metal which will be perfectly free from leakage without any such outward application, and it may be as large as three feet in diameter, if

required. The best metal for the purpose is copper, and one of the worst is brass. The latter will be corroded by contact with the gas, while the former will not. The size of the valve must bear some proportion to that of the balloon, from twelve to twenty-four inches diameter being sufficient for ordinary ones. A valve twelve inches in diameter is large enough for a balloon of 25,000 cubic feet capacity. The smallest of these need not weigh more than three pounds. They are made of rolled sheet copper, and consist of a U-shaped rim, a cross bar, two clappers, a bridge, and a set of rubber springs. The clappers of the valve are covered with soft leather, and a projecting edge on the rim and cross piece presses the leather into a groove near the edges of the clappers. The largest valves would gather so much water in case of rain that it is recommended to have the clappers as nearly flush as possible with the upper part of the rim instead of the lower, an arrangement that adds somewhat to the cost of its construction, but obviates the danger of having the

valve opened by an accumulation of rain. It is well to have the clappers of this style of valve worked up into a bulging form, from the groove to the center, in order that they may be somewhat stiffened. The sharp edge, which is fitted into the groove of the clapper, will be placed, in this valve, at the upper edge of the rim, but bent downward to meet the groove. Staples are on the under side of the clappers, to which cords are attached, forming a loop or loops for connecting the valve cord, which passes down through the neck of the balloon into the car.

To insert the valve, we have simply to draw the leather collar in the top of the balloon over the lower flange and around the rim, securely lashing it in its place. The upper edge of the collar is then turned down, and another lashing is made over it, to which are tied eight cords, arranged at equal distances apart, forming the net attachments.

The Net.—This is not so difficult to make as is generally thought. It is begun at the top or center, continued downward, and at the lower edge merges into tabs, to which are attached the ropes proceeding to the concentrating ring. A net must not only be strong enough to bear the load that the gas will lift, but must be equal to the strain brought upon it by the wind during inflation. It is of especial importance that the net should be strong enough at the top, near the valve, where the meshes must be small, so that if a break occurs in one it would not extend easily to the rest. The top is really the weak part of the net, particularly for captive balloons. Several instances are known of balloons passing through their nets from meshes breaking at the center, but fortunately no captive balloon has ever met with this accident while in the air, although it is liable to occur at any time if due care is not taken. Cotton twine makes the best net; silk would of course be light, strong, and soft, but its costliness puts it out of the question, except for special cases. Flax or hempen cord, though strong at first, soon weakens, and when wet with rain will shrink several feet, making a close-fitting net too small for the balloon, while under similar circumstances, cotton shows little or no change. The strength of twine required must be determined by the size of the balloon. For the smaller ones, a mesh should not break with a weight of seventy-five pounds, and for the largest it should bear two hundred pounds.

At a convenient height suspend a hoop, and tie on it, say, one hundred loops, each about three inches long. Begin by knitting the first row to these loops, and on the succeeding rows enlarge the number, by adding for the first few rounds four meshes, then three, two, and finally one mesh, until the number is sufficient to encircle the largest part of the balloon, after which the knitting will continue to the end without further increase of the number. The meshes may be frequently enlarged also, according to judgment. At the distance of eight or ten feet from the lower edge the net divides into twenty or more parts, which are knitted separately, and form the tabs to which the net ropes are to be attached. If two hundred meshes are on the last round, and twenty attachments are wanted, we begin the tab by knitting on to ten meshes, then return, first making a loop or half-

mesh, on the side of the tab. When the other point from which we started has been reached again, we make the last mesh on the side by includ-



THE LARGE CAR.

ing a cord that was left hanging at the beginning of the tab. Thus knitting right and left, adding the half-mesh on one side and the loose cord on the other, we at last complete the tab by gathering and tying the lower meshes together. Ropes of manilla hemp serve for the attachments to the concentrating ring. The top of the net is finished by cutting away the loops on which the first round was made, and then knitting with a double cord to the one hundred meshes, taking up two meshes at a time. A circle formed by passing a small rope through the last meshes completes the work. The net and cords, when stretched at full length, should be two or three feet longer than the balloon.

The Concentrating Ring.—This may be of wood or metal. A large mast-hoop, smoothly dressed down, answers the purpose very well. It should be strong enough to resist any strain that may be brought to bear upon it. Two loops of manilla rope have their ends spliced to the hoop at equal distances apart, and hang down a foot or more. To these loops the anchor rope and drag rope are attached. Neither of the ropes should ever be fastened directly to the hoop, as the latter may be broken by so doing.

The Wicker Car.—The car should be made of willow, as this is the lightest material that can be used for the purpose, and gives an unequaled degree of elasticity. Rattan is often used, although it is much heavier. It wears well, and may sometimes be added with advantage to the willow car. The shape of the car is a matter of taste. A closely woven basket of an

oval pattern is generally preferred. Six or eight strong ropes are woven into the willow, passing through the bottom and sides of the car and making from twelve to sixteen attachments to the concentrating ring. A convenient car to seat twelve or more persons is made with the addition of extended sides, which may be permanent or detachable, by having the parts made separately and attaching by rope laces. The extension forms the seats, and has another set of ropes to be fastened to an extra hoop, larger than the concentrating ring.

Floats.—Around the sides of the car, either within or without, may be lashed one or more floats. A contrivance that is light and always attainable consists, according to the size of the car, of from fifty to one hundred hermetically sealed fruit cans in a long, stout canvas hose just large enough for the cans to slip in. This forms a life-preserver in the water, and no one need fear drowning, though cut loose from the balloon, so long as he stays by the car. Those who are cognizant of the many disasters that have happened to aerial voyagers for want of some means of keeping afloat when falling into the water will fully appreciate the value of this simple device.

The Drag Rope.—This useful appendage is usually about 350 feet long, is simply a stout manilla rope, of a weight proportioned to the balloon. The lower end is pointed, and the strands are well sewed together to prevent raveling. It has come into use within the past thirty years, though it was suggested by Green, the English aeronaut, long before as a good appliance for preventing an erratic descent into the water. Some practice is required to reconcile the aeronaut to its use; for while it has many good points, it has some bad ones also, the worst of which is its liability to entanglement in tree-tops. The balloon is checked in its downward course when the rope begins to rest on land, water, or forest, and with the means of temporarily escaping woods or water the aeronaut is pretty sure of finding a good landing-place. Finally, the drag rope will help him to a safe descent by its frictional, hold-back qualities.

The Anchor.—An ordinary boat anchor will answer the purpose. Some use five-pronged grapnel hooks, which are most effective when the prongs are straight and three-sided like bayonets. A thin, diamond-shaped steel plate on the end of each gives a better hold in soft ground. Large balloons should have two anchors attached to the same rope, one a little in advance of the other. A boat anchor and a straight-pronged grapnel are very effective.

Size of Balloons.—A balloon of 7,000 cubic feet capacity may be made light enough, when filled with hydrogen gas, to carry a man of 160 pounds and some ballast. A capacity of about 12,000 cubic feet of coal gas will be required for one man. But neither of these balloons can carry much extra weight, and experienced aeronauts will not consent to such a limit. The sizes in general use range between 12,000 and 100,000 cubic feet. A party of 9 persons ascended with a balloon of 92,000 cubic feet capacity from the Centennial grounds in Philadelphia, carrying with them a large quantity of ballast. They were nineteen hours in the air, and landed near Perth

Amboy, N. J., considerably less than 100 miles from the starting point.

The balloon is capable of much greater development than is dreamed of at present. It is possible to make one that could sail around the globe; but until there comes a demand for such a wonder it is not likely to make its appearance.

The Care of Balloons.—Oil-varnished balloons are constantly changing in appearance, weight, strength, and condition of the oil film. At first the varnish scarcely discolours the cloth, but it soon begins to yellow, and in time darkens to a brownish hue. If too much exposed to air it will dry hard, and if kept an undue time from the air it will become soft and sticky. Fresh coatings have to be given from time to time until the accumulation of weight impairs its carrying powers. The "life" of a balloon may be doubled by simply sprinkling it over with kerosene oil after each ascension.

Montgolfier or Hot-air Balloons.—Unbleached domestic cotton is mostly in use for hot-air balloons, and the rule already given for cutting may be applied in this case, except that the neck has an opening of from 8 to 12 feet. Stays are stitched at intervals across the cloth, and a wooden hoop is usually attached to the neck. The fabric is improved with a little filling. Flour paste, paste and whiting, glue size and ochre, are all in use, but the best, perhaps, is a thick solution of soap and whiting, which is first laid on and afterward sprinkled with strong alum water. No net is required; all weight to be carried is suspended from the wooden hoop or neck of the balloon. No valve is needed, but the balloon is suspended by an iron ring during the early part of the inflation.

The Parachute.—Linen or cotton cloth is the material for parachutes. They are umbrella-shaped when in the air, but have no frame work. They are cut in a similar manner to the upper third of a balloon, and should be well stayed. Strong cords are pendant from the edge or are sewed along the seams, and are of sufficient length to prevent violent swaying in the descent. The cords are concentrated to a point or small hoop, from which a basket or other contrivance may be suspended. At the top of the parachute is a knife so arranged that on pulling a cord it cuts the rope attaching the parachute to the balloon. Sometimes a hoop is suspended inside to facilitate the opening of the folds when the rope has been cut. No parachute should be less than 30 feet in diameter, to insure easy lighting.

Inflation.—The Montgolfier depends entirely on heated air for its buoyancy. A long, wide, and deep trench is dug, in which the fire is made, and the heat conveyed to the balloon. The trench is covered with iron plates, or logs of wood with earth upon them, and a short, cylindrical chimney is built upon one end; this, with a broad, wooden cover for the chimney, completes the arrangement. Two tall poles, with pulleys at the top, stand at a convenient distance, one on each side of the trench. Through the pulleys and through the ring at the top of the balloon runs

a strong rope, by which the head of the balloon is hoisted after its neck and folds have been carefully arranged around the chimney. Several men seize the cloth and steady it, to prevent contact with the fire. The outer end of the trench is filled with light, dry wood; a cupful of alcohol, benzine, or kerosene is thrown over the wood, and the fire is started. A man stationed within the balloon stands by the chimney, with the wooden cover, ready to damp the fire, and has a pail of water at hand from which he can



A SNOW DROP.

sprinkle the balloon if sparks find a lodgment anywhere. The helpers stand upon the folds of cloth to prevent cold air from entering. From ten to twenty minutes, with a brisk fire, serves for the complete distention of the globe. The parachute, previously attached to cross ropes on the hoop, lies at one side. The gymnast takes his place beneath on the trapeze or other contrivance, the cover is put on the chimney, all let go, and, with a rush, the ascension takes place. As the heated air soon cools, not many minutes are lost in selecting a place for alighting. The parachutist then pulls the knife cord, which cuts the rope connection, and instantly he is seen to drop, at first like an arrow, but in a moment the parachute catches the air, and then sails steadily down, alighting generally much easier than if he had continued on with the balloon.

Carbureted Hydrogen Gas.—Gas from coal is a practical substitute for hydrogen, although its buoyancy is much less, being only 35 to 40 pounds per thousand feet. But its use is more general, because of its comparative cheapness. The necessity for erecting temporary apparatus, the cost of materials and labor, all tend to make hydrogen ten times more expensive than coal gas. Much of the gas now made for illuminating is coal gas adulterated with water gas and petroleum oil, or consists entirely of the latter. Oil gas is too heavy for balloons, and hence any of these mixtures may be considered useless. Water gas of itself will answer very well, as it is nearly as buoyant as coal gas; but it must be taken for inflation at the gas works, and be made expressly for the purpose. The inflation

with coal gas is made from an opening in any street main that is large enough to give a sufficient flow in the desired length of time. Small mains, or those at considerable distance from the works, will, as a rule, deliver the gas too slowly. To settle any question regarding time required for obtaining a given quantity at any point, make a test with a small balloon, of 500 cubic feet capacity, noting the time required to fill it, and calculate accordingly.

Hydrogen Inflation.—Hydrogen gas for balloon inflation is made by the decomposition of water with the aid of sulphuric acid and fine iron. Large wooden tanks, hogsheds, or barrels are used for the process, into which the iron and water are first introduced, and when the acid is added the generation immediately begins. Two hundred and fifty pounds of acid, the same quantity of fine iron, and 1,000 pounds of water are required for each thousand cubic feet. The gas passes through pipes to a washer, and is made to bubble up through lime water, after which it passes through a flexible conductor to the balloon. Hydrogen gas will lift, according to its purity, from 60 to 70 pounds for each thousand cubic feet.

The balloon is prepared for inflation by extension at full length, folding the breadths one upon another, and then equally dividing the leaves so that they shall lie in fan-like fashion two breadths wide. With the neck of the balloon toward the gas apparatus, it is to be covered with canvas two thirds of the way from the neck to the valve, and on this canvas, close to the balloon, sand bags are arranged to prevent the folds expanding with the gas, except at the upper end. As the inflation progresses, the bags nearest to the filled portion are removed one by one. The net is spread over the top, and fastened round the valve, and then the gas is allowed to flow through to the valve end. A large bulb soon forms, the head of the balloon rises, the net is adjusted, and sand bags are hooked on to keep all in place, changing them to lower positions as the work progresses, until finally the globe is completely distended. In the mean time the car may be attached by tying the net cords to the concentrating ring; some sand bags may be put into the car, those on the netting allowed to slide along the net ropes, and on reaching the concentrating ring ropes may be removed altogether. The anchor and drag rope must be neatly coiled

and hung on the side of the car, while their ends are to be fastened to the cross loops overhead. The anchor should be hung by its flukes to the side of the car, and may be lashed to its place until needed. Extra clothing, water, and provisions are next in order, and then the aeronaut is

ready to be off. Sand bags are removed one at a time until the car floats and is held by a single rope. This is then cast off, and the voyage begins.

The Voyage.—A sufficient buoyancy must be given to clear all projections. The gas expands as it rises in an atmosphere of increasing rarity, and soon begins to be ejected from the open neck of the balloon. The loss, under a cloudy sky, may stop the ascent, but in bright sunshine the balloon, floating in a relative calm, will become heated to the extent of gaining many additional pounds of ascensive power, and, in spite of the continued loss, will keep rising until there is no further gain in heat; then a descent occurs, which can only be overcome by the discharge of ballast. A voyage in the day-time usually consists of a series of ascents and descents, because of the alternate overflow of gas and discharge of ballast; but at night this is all changed; for a good gas-tight balloon may be suspended at one constant height all night long. The reason of this is that there is a decrease of temperature at the rate of one degree for every four hundred feet, and as cold condenses gas, making it heavier, it finally reaches a height at which its impulsive force meets with a counterpoise, and between the two the balloon finds its level.

The wind's speed may be nothing, or it may exceed seventy miles an hour. A dead calm often leaves the balloon in queer places, from which extrication is not difficult, for a boy may walk away with it, or a skiff can carry it to the shore. It is different in high winds; then we have a monster to handle, which at times can only be conquered by ripping open its gas-expanded sides. Thunder-storms are to be avoided, and the aeronaut must be wary, or he may be drawn into them very unexpectedly. Do not run high, but rather keep as low as possible. Ordinary rain-storms are unpleasant, for the water courses down the sides of the silken globe, falling in streams from its neck into the car; yet the moist-



ON THE OCEAN WAVE.

ure does not affect the voyage in any great degree. But beware of snow clouds, for the little crystals may gather in such quantity on the broad roof above your head that a sudden descent will bring you to the ground in spite of all your efforts.

Long voyages are beset with many difficulties, particularly from forests and large bodies of water, over which a greater sense of security is gained by the possession of a drag rope. Lake Erie is crossed or run its whole length with the drag rope more easily than a dozen miles of Long Island Sound without.

The open sea is the most threatening in its aspect, for no ordinary balloon could reach its farther shore, and if caught within its domain, the *aéronant* will be glad that he has a drag rope to keep him out of the wet. There is one instance

is at hand, and these episodes are apt to be very entertaining, as the *aéronant* is usually made welcome.

But if you are traveling through the South it is best to be on the lookout for "Johnny and his gun." He may mistake your intentions, for he seldom sees a balloon, and when he does, if you take him by surprise, he will shoot before he inquires into your motives. While visiting, or at the end of your journey, you can amuse yourself and the inhabitants by making a few captive ascensions. This can be done, when the air is calm,

by paying out the drag rope carefully, hand over hand; but if the men let the rope slip, it may get so much momentum as to lift them off their feet, and cause them to let go.

In case of wind, a landing may be effected with difficulty unless care be taken to choose a sheltered place. Cross a mountain at the rate of forty miles an hour, drop into the valley on its farther side, and the air will be found as still as when the flags hug their masts. Any depression is an advantage, and a safe harbor will usually be found behind a piece of woods.

In landing, look out for dead trees; every one is a balloon trap. If you should strike one, lose no time in getting out of it, for the limbs may break

and drop their load, to your serious injury. If you find yourself upon a strip of sandy beach, with the open sea before you and your passengers beginning to tumble out, that is one of the best places to use the collapsing cord, and finish by treading upon the sand rather than in the water.

Ordinary ascensions, such as are made for the entertainment of the public, do not usually exceed the height of one to two miles. As generally expressed, low sailing—say, within the range of 1,000 feet—is the pleasantest. We see all objects more plainly, can talk with the inhabitants as we pass along, and realize something of that sense of superiority which wings give to the feathered tribe.

Preference is given to the afternoon for ascensions for several reasons, but principally because of the preparations requiring considerable time, and also that with a declining sun the wind generally falls, making a descent about sunset much safer, as a rule, than at any other time of day. Pleasant weather is, of course, the best, although cloudy days are the most favorable for variety, the cloud scenery being intensely attractive to most persons. *Aéronauts* seem to have little *penchant* for carrying instruments; it is the passenger or the investigator of scientific questions that requires their use. The *aéronaut* is satisfied with his barometer or without it; he has learned the appearance of objects from cer-



A SAFE HARBOR.

on record where two voyagers were brought back to the land by a yacht, which gave steerage way to the balloon while the latter towed the boat with a wind blowing parallel to the shore. All *aéronants* agree that after hours spent over a watery waste no more welcome sight could be imagined than to see the land once more beneath their feet. Forest wilds produce an intensely lonesome feeling, and one wonders what would become of him if the wind should fail or the gas give out. Under such circumstances he clings tenaciously to the ballast as his only salvation, and the drag rope is made to do duty in climbing the mountains before him. This is easy enough, though he runs the risk of the rope's becoming entangled in the tree-tops, yet he always has the satisfaction of knowing that the rope can be cut loose, if necessity should arise. Such a release would send him above the highest peaks and perhaps into the still more solitary clouds. But forced landings sometimes occur, and the voyagers have to make the best of it. It happens, however, that some of the most unpromising descents turn out to be the best, furnishing another chapter of adventure in descending mountain streams, camping under primitive forest trees, sighting the startled game, and finally sharing the lumberman's rude cabin just once before looking upon civilized life again. Occasional calls may be made by means of anchor or drag rope, particularly where assistance

tain heights, and he feels almost intuitively the rising or falling of the balloon. But a scrap of paper thrown from the car solves any doubt. Extra clothing should always be carried for extended voyages, and provisions also, for nothing can be more uncertain than the landing-place after a prolonged flight in the air.

America is, perhaps, the best country in the world for long and interesting voyages; the great variety of scenery, particularly east of the Mississippi, the one general language, and the intelligence of the people, all favor this above other countries; but for short aerial voyages the best place is, no doubt, to be found in France or England.

The most remarkable ascensions in this country, since that of La Mountain, are the following: Lowe sailed from Cincinnati to Columbia, S. C., about 300 miles, in six hours.

Two experienced voyagers rose from Plymouth, N. H., in 1872, and, having crossed the White mountains, found themselves at nightfall in the wilds of Maine. After alighting among the tree-tops on the lee side of a mountain, where they consulted for half an hour on the possibility of escape from their dilemma, they determined on a continuation of the voyage. Throughout the night they floated on over the Maine and Canada wilderness, and toward morning were carried out over the Gulf of St. Lawrence. Their ears caught the sound of the surf beating on the shore while they were passing out over the water. They made a careful descent, availing themselves of the advantages of the drag rope, when by good fortune a counter-current wafted them back to the shore. Daylight coming on, they discovered a road—the only one in hundreds of miles—and effected a safe landing near the little French settlement called Sayabec, 250 miles below Quebec.

A company of five persons rose from the city of Buffalo, and, taking a southerly course, passed into the State of Pennsylvania. Crossing the Allegheny mountains, they reached Havre de Grace, Md., where, ascending to a great height on account of the heat of the rising sun, they encountered a current from the west, which carried them over the State of Delaware and landed them in southern New Jersey. They were about thirteen hours in making the journey.

Seven persons rose from Cleveland at 11 o'clock A. M., on a September day, and were immediately swept out from the shore. Their course lay down the lake for a hundred and thirty or forty miles, when they came down for a sail on the water by the aid of the drag rope. In doing so they doubled back on their former course, but with a tendency toward the Canada shore. They repassed Erie and Cleveland, and at 7 P. M., after eight hours over the lake, they left it at Point au Pele, on the Canada side. Approaching Lake St. Clair, they were seeking for a landing-place, when, in passing over a piece of woods, the drag rope fouled among the trees. Sand was thrown out to force it loose, and after three heavy bags had been disposed of the balloon was freed and rose rapidly to the clouds. Lake St. Clair was crossed in the darkness. The tinkle of an occasional cow-bell was then heard, but later they heard the deep-toned voice of a steam gong, descended, and saw the

lights of a steamer on Lake Huron. Port Huron was at their feet, but they were hurried away from it by a lake breeze met in the descent, and a landing was effected at midnight, eleven miles from the town.

Two voyagers ascended from Chicago, who, by a circuitous route of six hundred miles, after a nineteen-hours' voyage, found themselves in a dense wilderness. They spent five days without food before a habitation was found, and three days more in reaching Chippewa Falls, where they could telegraph to their friends.

The "Daily Graphic" Company, of New York, announced that they would send a balloon across the Atlantic. Donaldson and Wise were to be the aeronauts, and a balloon of 450,000 cubic



AN INHOSPITABLE RECEPTION.

feet capacity was constructed of domestic cotton and coated with oil varnish. The materials employed were too cheap and primitive for such a great undertaking, and coal gas was deemed sufficient for a voyage of thousands of miles. The parties quarreled when the day for the in-

flation arrived, and poor Donaldson, with the experience of scarcely a dozen ascensions in a little one-man balloon, found himself in sole control of the immense *aërostat*. In his efforts to fill it, all control was lost, and the bag itself was saved only by a judicious use of the knife.

about one hundred miles a descent, which they could not govern, brought them in contact with objects on the ground. Becoming demoralized, they abandoned the ship. The landing was effected at East Canaan, Conn.

Long Voyages.—The longest voyage ever made in this country was that of John La Mountain, from St. Louis to the vicinity of Watertown, N. Y., July 1 and 2, 1859. The distance, as measured on various maps, is from 825 to 835 miles in a direct line. The *aéronaut* had with him as passengers Mr. O. A. Gager, of New York, Mr. Hyde, a journalist of St. Louis, and the well-known *aéronaut*, John Wise, of Lancaster, Pa. The balloon was of oiled silk and had a capacity of about 90,000 cubic feet. The voyage was made in about sixteen hours.

Paul Rolier, one of the impromptu *aéronauts* of the siege of Paris, and a sharp-shooter named Deschamps, ascended together in a balloon of 70,400 cubic feet capacity, and landed in Norway, it is said, 600 miles north of Christiania, the capital of that country. If this is correct, it would appear to be the longest voyage on record. The voyagers during the night descended over the sea, and, their drag rope being insufficient, they were dashed into the waves; but by throwing out some Government dispatches they rose again, finally effecting a landing in a forest where the snow was knee-deep. They were fourteen hours and forty minutes on their journey, suffering much from cold. They slept alternately till the following morning, menaced by the vicinity of wolves. They found a cabin and some Norwegians next day, and soon reached a neighboring village, whence they were carried on sledges, and finally by rail reached Christiania. They were not incumbered with their balloon, for, in their haste to land, the balloon, with a portion of their dispatches, escaped, coming down again many miles away and frightening the inhabitants.

The New York "World" recently undertook to break the record of long voyages with a balloon of 160,000 cubic feet capacity, and employed an amateur to do the work. The undertaking was too great for a person of limited experience. An older *aéronaut* sent the balloon and party aloft, but, with everything favoring a long and eventful voyage, the inex-



THE ONLY WAY OUT.

Another *aéronaut*, of more experience, was sent for, with no better results; but at last one was found who succeeded in starting Donaldson and his two companions on their journey. Fortunately, they did not go directly out to sea, though Brooklyn was their point of departure; but they kept inshore, and at the distance of

perienced one failed to keep afloat, reaching the ground fifty-three miles from the starting point, St. Louis.

Other voyages have attracted general attention, particularly the flutal ones of Donaldson and Wise. The former rose from the lake front of Chicago, taking with him young Grimwood, a reporter. They floated off at a ten-mile gait directly up the lake, and were at last lost to view. A terrific storm arose that night, and no reliable news was had of them for weeks, when the body of Grimwood was found in the sand on the distant shore of the lake. The finding of the body, with a torn life-preserver around it, told all that will ever be known of their fate. It is probable that Donaldson remained in the car and sank with the balloon.

Wise arose from St. Louis, having a reporter with him named Burr. The wind was high and favorable for a very long voyage; and, besides, a landing in such a wind would have been dangerous. They continued into the night, but the gale did not abate. The balloon was not very large, and was incapable of remaining up a great while. Three hundred miles in a straight line they went for Lake Michigan, and after reaching it were swamped in its cold embrace, as Donaldson and Grimwood had been. Burr was washed ashore and his body was found, but Wise probably sank in his car.

Highest Ascents.—The highest ascent is claimed by Cogswell, the English aeronaut, and Glaisher, the meteorologist, who ascended together from Wolverhampton, England, Sept. 5, 1862. Glaisher, in his account of the ascension, published in his "Travels in the Air," claims to have made an instrumental record of 6 miles, and would like to have it believed that they rose another mile after their exertions had ceased. He said his eyes failed him, and he called on Mr. Cogswell to help him read the instruments; but "in consequence of the rotatory motion of the balloon, which had continued without ceasing since leaving the earth, the valve line had become entangled, and Cogswell had to mount into the ring to readjust it." The statement is rather unscientific, and it will always be a conundrum how the cord could become entangled in that way. Had the scientist dealt with plain facts, more credence would be given to his story, but he attempted the sensational by telling how Cogswell lost control of his hands after climbing into the hoop, and, without saying how he managed to sustain himself in such a position, tells us that he took the valve cord between his teeth and let off gas enough to send the balloon down. Here is another riddle for the practical aeronaut. Why did he want to open the valve at all, when a simple cessation of his labors from pushing the balloon to a greater height would have accomplished the same object? Though he opened the valve at 6 miles, Mr. Glaisher was so anxious for the greatest-height record that he would fain stretch it to 7 miles. He has given us his remarkable story of the ascent with a heavy cotton balloon of 90,000 cubic feet capacity, filled with coal gas, and has made it well-nigh impossible for the lightest balloon filled with the purest hydrogen to compete with him. It is certain that coal gas will never do it again.

A few years since three Frenchmen ascended

together with the intention of rising to the greatest possible height. They carried bags of oxygen to supply them with its life-sustaining properties, and after they had risen to the height of five miles, being reinvigorated by its inhalation, one of their number suddenly seized three bags of sand, one after another, and discharged their contents over the side of the car. Almost instantly the three men became asphyxiated, and only one of them recovered after reaching the earth. The death of the two aeronauts was supposed to have been caused by the increased rarity of the air; but it seems more probable that the gas descending upon their heads as it was forced out of the mouth of the balloon from the rapid expansion caused by the injudicious discharge of ballast, produced the effect.

Professional aeronauts are very few in America, though there are numbers who follow some other occupation and make occasional ascents. It is safe to say that not more than half a dozen names could be mentioned of persons who devote themselves exclusively to this pursuit. In England there are as many as here, while in France they are more numerous, because of the more frequent opportunities for ascension, no *fête* day lacking its balloon attraction. The whole number of professional aeronauts in the world is not more than fifty; but parachute jumpers and hot-air balloonists are not included, for they can be counted by hundreds in every civilized country.

The dangers of ballooning are often magnified, but it can not be denied that for him who follows it for a life-time there is more or less of peril. Many narrow escapes occur and sometimes a life is lost, as in the case of Thurston, Donaldson, and Wise. Stiner died from the effects of exposure in a descent near San Francisco, where he was compelled to wade for hours through water, sometimes up to his neck, in seeking to extricate himself from an isolated position. The accidents to balloons are frequent. It is rare, indeed, that twenty ascensions can be made without three or four wrecking experiences. Trees are ordinarily the cause of these mishaps. The oiled fabric tears easily, and through failure to obtain anchorage, and high winds, an aeronaut frequently loses more in a single descent than his earnings for half a dozen ascensions; but, with all these drawbacks, there is no more fascinating enjoyment.

BAPTISTS. I. Regular Baptists in the United States.—The following is a summary of the statistics of the Baptist churches in the United States as they are presented in the American Baptist Year-Book for 1891: Number of associations, 1,382; of ordained ministers, 22,703; of churches, 34,780; of members, 3,164,227; of Sunday schools, 18,555, with 131,889 officers and teachers and 1,280,663 pupils; increase by baptism during the year, 140,058; value of church property, \$61,646,377. Amount of contributions: For salaries and expenses, \$7,186,532; for missions, \$1,045,371; for education, \$374,039; miscellaneous contributions, \$2,609,637. The numbers for the rest of North America are: British Provinces, 795 churches, 517 ministers, and 77,832 members; Mexico, 1,161 members; Cuba, Hayti, Jamaica, and other islands, 42,910 members. Total for North America, 35,817 churches, 23,844

ministers, 3,286,030 members. In Brazil, 8 churches, 8 ministers, and 312 members. In Europe, 3,871 churches, 3,081 ministers, and 408,742 members, of which 2,802 churches, 2,974 ministers, 320,163 members are in Great Britain and Ireland, 20,990 members in Germany, and 33,521 members in Sweden. In Asia, 696 churches, 470 ministers, and 79,468 members. In Africa, 47 churches, 74 ministers, and 2,958 members. In Australasia, 192 churches, 124 ministers, and 15,568 members. Total for all countries, 40,631 churches, 27,101 ministers, and 3,793,078 members, showing an increase from the previous year's reports of 941 churches, 1,755 ministers, and 91,696 members. The whole number of baptisms returned in 1890 was 155,494.

The educational institutions in the United States comprise 7 theological institutions, with 57 instructors and 657 pupils; 34 universities and colleges, with 422 instructors and 6,537 pupils; 38 seminaries for female instruction exclusively, with 405 instructors and 4,886 pupils; 45 seminaries and academies for young men and for persons of both sexes, with 281 instructors and 5,578 pupils; and 26 institutions for the colored race and Indians, with 198 instructors and 4,780 pupils. Of the 16,895 pupils in the universities and colleges, seminaries and academies, and freedmen's and Indians' schools, 1,575 were preparing for the ministry, making with the students in the theological seminaries, 2,232 persons studying with that end in view.

The Baptist African Missionary Convention of the Western States and Territories reported in 1890 a year's receipt of \$418, and was supporting two missionaries on the Congo river in Africa, while two more were on the way there; and the Women's Convention in Kansas co-operates with it in the support of another missionary. The Baptist Foreign Missionary Convention of the United States (colored) has, since its organization in 1890, collected about \$25,000; sent out 11 missionaries, who have labored at 3 stations and 5 out-stations, and received 300 converts. Its receipts for 1890 were \$4,135.

The American National Baptist Convention (colored) reports 17 State conventions, 12 schools owned and managed by the Home Mission Society, and 44 owned and managed by colored Baptists themselves.

Home Mission Society.—The fifty-ninth annual meeting of the American Baptist Home Mission Society was held in Cincinnati, Ohio, beginning May 20. The Hon. C. W. Kingsley presided. The receipts for the year, including conditional and trust funds, but not including church-edifice loans repaid, had been \$405,153. Of this sum, \$15,341 had been contributed through the woman's societies of Boston, Connecticut, Michigan, and Chicago. The expenditures, not including loans to churches, had been \$408,497. The society's labors had been conducted in 49 States and Territories, and in Ontario, Manitoba, British Columbia, Alaska, and six States of Mexico, and had engaged the services of 948 missionaries. Of these, 209 had labored among foreign populations, 286 among the colored people, Indians, and Mexicans, and 443 among Americans. One hundred and five new mission stations had been taken up, 38 of them among foreign populations. The society aided

in the maintenance of 26 established schools for the colored people, Indians, and Mexicans; 8 day schools for the Chinese in California, 2 in Oregon, and 1 in Montana; and 2 schools in Utah, 2 in the Indian Territory, and 3 in Mexico. The missionaries represented 13 nationalities or peoples, viz., Americans, Germans, French, Swedes, Danes, Norwegians, Indians, negroes, Chinese, Mexicans, Bohemians, Poles, and Finns. Other items of the work are: Churches and out-stations supplied, 1,328; members received by baptism, 4,523; churches organized, 199; total church membership, 41,735; Sunday schools under the care of missionaries, 948; attendance on Sunday schools, 64,191; benevolent contributions reported, \$43,627. During the fifty-nine years of the society's existence 117,103 persons had been baptized and 4,226 churches organized by its agents. In twelve years the increase of missionaries to the colored people had been twofold and of teachers more than fourfold; of missionaries to the Chinese, twofold; to the Indians, twofold; to the Mexicans, from none to 15; to the French, threefold; to the Germans, about twofold; to the Scandinavians, nearly fivefold; and to the American population, nearly twofold. In the church-service department, 88 churches had been aided by gifts or loans, or both, to the amount of \$42,499. The Loan fund amounted to \$118,874. The receipts for the year on its account had been \$6,200. The receipts for the Benevolent fund had been \$22,639.

Publication Society.—The annual meeting of the American Baptist Publication Society was held in Cincinnati, May 22. The Rev. Thomas Armitage, D.D., presided. The society had received in its three departments, \$647,884. The sales in the book department had amounted to \$529,596, or \$25,943 more than in the previous year; the receipts of the missionary department had been \$95,493, or \$30,000 less than in the previous year; and the Bible department, \$22,729. There had been contributed from the book department to the missionary department, \$128,437, of which \$46,880 were in cash, and the remainder in books and tracts. The missionary work of the society was represented by 122 missionaries, who returned 44 churches constituted, 500 Sunday schools organized, and 317 pastors, ministers, and students aided with grants for their libraries. An unfavorable report was made of the condition of the mission which had been begun in Armenia eight years before, the results of which had not been successful and the prospects of which were not encouraging; and the meeting resolved that, after reasonable notice to the present agents on the field, the society should discontinue appropriations to it. There had been much difference of opinion among Baptists as to the expediency of sustaining this mission, which was working in fields already occupied by the American Board, with embarrassment to some of that society's churches.

Missionary Union.—The seventy-seventh annual meeting of the American Baptist Missionary Union was held in Cincinnati, May 25. The Rev. G. W. Northrop, D. D., presided. The total receipts of the treasurer from all sources for all purposes had been \$492,275, of which \$121,690 had been contributed by the two Woman's Foreign Missionary Societies; the expend-

tures or liabilities had been \$553,869, showing a balance against the treasury of \$61,594. From the missions to the heathen there were returned 68 stations and 1,322 out-stations. Including 98 missionaries who were now absent from their fields, there were 378 missionaries, of whom 14 were physicians, 13 laymen, 107 single women, and 119 wives of missionaries. The European missions returned 965 preachers, 734 churches, 76,039 members, and 6,354 persons baptized in 1890. In all the missions there were 378 missionaries, 1,823 preachers, 1,415 churches, 152,642 members, 15,062 baptized in 1890, and 71,950 pupils in Sunday schools. The contributions from the mission churches had been: From the heathen missions, \$51,038; from the European missions, \$186,158. The heathen missions were the Burman, Karen, Shan, Chin, Kachin, Telugu and Tamil, Assamese, Garo, Naga, Kohl, Chinese, Japanese, and Congo missions. The European missions were in Sweden, Germany, Russia, Denmark, France, and Spain. The most conspicuous events of the missionary work of the year had been the visit of the Rev. Henry C. Mabie, one of the corresponding secretaries to the missions in Asia, and the great revival in the Telugu mission. The growth of that mission since its beginning has been remarkable. In 1866 there were 1 station and 38 members. A second station was then founded, and a rapid growth begun. At the end of 1877 there were 4,517 members. In 1878 there were 10,601 baptisms, of which 2,222 were on July 2. In the report for 1890 the number of members was given as 33,898. The complete statistics for the past year gave the number of baptisms as more than 6,000, and the whole number of church members as more than 40,000. A good account was given of the character and steadfastness of the converts. The plan for the celebration of the centennial, in 1892, of Protestant foreign missions, or the one hundredth anniversary of the beginning of that work by William Carey, reported by the committee and adopted by the meeting, contemplates services to be continued through the year, and includes a commemorative discourse and other special services at the annual meeting of the Union, in Philadelphia, in May; efforts to send out one hundred new missionaries and raise a memorial fund of one million dollars for the universal work of the Union; general meetings to observe the four memorial days of the Carey movement, to be held in different parts of the country under the supervision of the Centennial Committee; and at least one memorial service to be held in each church or group of churches in commemoration of the instrumentality of Baptists in promoting world-wide evangelization.

Woman's Home Mission Societies.—The Woman's Baptist Home Mission Societies held a joint meeting in connection with the anniversaries of the three preceding societies. The receipts of the Western society (Chicago) had been \$57,085; expenditures, \$48,209, leaving a balance of \$8,876. The Eastern society (Boston) had received \$43,000, and supported 47 teachers, chiefly among the negroes.

An autumnal missionary conference was held in Buffalo, N. Y., Nov. 17, 18, and 19, the first of a series of conferences projected by the Missionary Union to be held apart from the anniversaries, when more time can be given to the consid-

eration of the aims, spirit, and methods of future missionary operations. The features of the meeting included the reading of papers on those subjects and discussions of them.

Baptist Young People's Union.—A Young People's Baptist Union of America was organized at a convention held in Chicago, Ill., July 7. Its objects were declared in the constitution adopted to be: "The unification of Baptist young people; their increased spirituality; their stimulation in Christian service; edification in Scripture knowledge; their instruction in Baptist history and doctrine; and their enlistment in all missionary activity through existing denominational organizations." Mr. John H. Chapman, of Chicago, was chosen president. Forms were adopted for constitutions of State, associational, and local organizations.

Southern Baptist Convention.—The Southern Baptist Convention met in Birmingham, Ala., May 8. The Hon. Jonathan Haralson presided. The report of the Foreign Mission Board showed that it had received from the churches \$113,322, and was indebted \$4,206. The missions were in China, Japan, Africa, Italy, Brazil, and Mexico, and returned 38 main stations, 147 out-stations, 86 American missionaries, 23 ordained and 53 unordained native assistants, 67 organized churches, 2,377 members, 861 baptisms during the year, and 22 schools, with 623 pupils. The mission in Japan had been established during the year. The Home Mission Board had received \$67,188; in addition to which the State Conventions and District Associations raised not less than \$100,000 for State and district missions. The board had employed 406 missionaries, against 371 in the previous year: of whom 31 had labored among foreign populations, including Indians, 22 in Cuba, and 51 among the negroes. The work of the board among the Indians was confined to the Indian Territory. The Baptists of the South had been at work among these people for half a century, and this convention for nearly forty years; and the success attending efforts to evangelize them had been remarkable. There were now in the five civilized tribes as many baptized believers and as many churches and native preachers, in proportion to the population, as in any community on the globe. The Levering school would after the present session be no longer under the control of the board, the Creek nation, possessing a very large school fund, having resolved to terminate all existing educational contracts with mission boards, and assume the entire responsibility of educating its people. The work among the colored people had not reached the importance it demanded, and the report of the board dwelt upon the need of enlarging it. The work in Cuba continued with unabated interest. A large church had been dedicated in Havana on Feb. 15. Mr. Diaz, the missionary, reported that there were 7 churches, with 1,917 members and 210 baptisms during the year; 7 Sunday schools, with an average attendance of 679 pupils; and 8 church buildings.

The Woman's Missionary Union, which is auxiliary to the convention, had received \$38,980. Besides assisting in the maintenance of the home missions and sending supplies to them, it had contributed to the support of twenty-five girls

in a Cuban college for young women and in the support of missionaries in the foreign field, and had this year collected a Christmas offering of \$4,320 for the North China Mission. The present was the third annual meeting of the Union.

American Baptist Education Society.—The third annual meeting of the American Baptist Education Society was held at Birmingham, Ala., in connection with the meeting of the Southern Baptist Convention. Its report showed that there were 140 Baptist institutions of learning in the United States, into whose necessities the executive board had carefully looked. During the past three years the society had aided institutions in securing endowments to the extent of £209,850. This sum, conditionally given, had brought to the institutions aided an aggregate of \$1,165,000. If the present assets of the Chicago university (\$2,250,000) were added, the work of three years would be represented by the total sum of \$3,415,000.

II. Free-Will Baptist Church.—The Free-Will Baptist Annual Register and Year-Book for 1891 gives as the totals of the statistics of the Free-Will Baptist churches: Number of yearly meetings and single associations, 54, with 8 quarterly meetings and 14 churches not connected with any yearly meeting; of quarterly meetings, 201; of churches, 1,630; of ordained ministers, 1,398; of licensed preachers, 218; of members, 86,405.

The Education Society received \$3,078 during 1890, and returned \$10,198 as the total amount of invested funds in its hands on Aug. 31 of that year. Thirteen institutions of academic and collegiate grade are sustained by the denomination.

The receipts of the Home Mission Society for 1890 were \$110,759; and the amount of its invested funds was returned at \$14,075.

The Foreign Mission Society returned receipts of \$21,642, with invested funds of \$35,449. From the mission in India (Bengal and Orissa Yearly Meeting) were reported 1,410 members of the native Christian community, with 2,721 pupils in Sunday schools and 3,520 in the day and general schools. There are also connected with the denomination a Woman's Mission Society, a Temperance Union, a Sunday-school Union, a Young People's Social and Literary Guild, and a United Society of Advocates of Christian Fidelity.

III. Seventh-Day-Baptist Church.—The whole number of members returned in this Church for 1891 is 8,748. Of this number 1,796 are non-residents. The statistical secretary called especial attention in his report to this class of members—persons scattered over the land and trying to observe the principles of their creed in a state of isolation from their fellow-members. There are, he said, probably many more little groups of Seventh-Day-Baptist families than there are organized churches. The Sabbath-school Board had reports from 75 schools, in which were 5,395 members, of whom 822 were officers and teachers. The trustees of the Memorial fund returned an income for the year of \$6,495, and the total amount of endowment funds realized as \$116,748. The treasurers of different institutions had received \$14,422 for notes paid direct to them and accounted part of the Memorial fund. There were besides four

parcels of real estate bequeathed to this fund, the value of which was not yet estimated.

The Education Society had received \$1,795 on interest account, and \$2,600 on account of principal; the endowment funds and securities to its credit amounted to \$45,088. It presented reports from Salem College, Virginia, Albion Academy, Wisconsin, Milton College, Wisconsin, and Alfred University, New York. The last institution had an endowment fund of \$51,514.

The Tract Society had received \$7,267. It had a Hebrew Paper fund of \$779, and a permanent fund of \$8,047. A minute adopted at a meeting of the society declared that the arguments set forth to sustain the observance of Sunday "tend to destroy confidence in the divine authority of the Word of God and to do away with the sense of the obligation to observe any Sabbath at all," and that the Seventh-Day people can hope to present effectually their distinctive principles only among those "who recognize the necessity of a Sabbath based upon the Scriptures."

The receipts of the Missionary Society, not including receipts in the China field, had been \$11,939. The mission at Shanghai, China, returned 4 foreign workers and 3 native preachers, with 32 church members, 42 pupils in day schools, and 4 additions to the Church during the year, and 3,283 patients had been treated in the dispensary. The mission church in Harlem Holland, returned 31 members. Although no Jewish mission had been established, a contribution to that work had been sent to a missionary in Austria. Reports were made from many home mission stations. The Woman's Board, co-operating with this society, had received \$3,051.

The General Conference met at Westerly, R. I., Aug. 19, under the presidency of Mr. George B. Carpenter. The delegates to the council held in Chicago, in October, 1890 (see "Annual Cyclopædia" for 1890), reported concerning the satisfactory character of the sessions and presented a copy of the proceedings. As a representative body the council surpassed any former gathering of the people of the Church. Delegates attended from the General Conference, from the benevolent societies and boards, and from 79 churches. The Committee on Denominational History reported that historical and biographical articles and papers on missionary history had been published in the denominational journals, and urged that the series should be completed and published in collected form. Resolutions were adopted urging the demand for increased aggressiveness and activity in promoting the movement for "Sabbath reform," with which the denomination is identified; expressing joy and approval over the increasing interest in missions and in the higher education; reiterating the opposition of the conference to the use and sale of intoxicating liquors; condemning distinctions in regard to immigrants based upon prejudice, race, or color instead of other characteristics; commending the study of the issues presented by the "Higher Criticism" in Bible study; and approving the Christian Endeavor work of the young people.

IV. Baptists in Great Britain.—The Baptist Union of Great Britain and Ireland met in London, April 27. Col. James Theodore Griffin

presided. The report of the council showed that there were connected with the Union 2,802 churches, 3,781 chapels, 1,223,526 chapel seats, 330,163 members, 48,132 teachers and 482,892 pupils in Sunday schools, 4,000 local preachers, and 1,874 pastors in charge; and that £54,605 had been expended on new chapels, £38,591 on improvements, and £67,388 toward reduction of debt. An incorporation had been secured in order to enable the Union to hold securities and other property of the Annuity fund. The establishment of a publication department and a denominational book room had been considered. The securities of the Annuity fund were valued at £143,590; the additions during the year had been £8,452, besides which the stock had largely increased in value. The receipts for the Augmentation fund had been £10,034; and for the Union itself, £1,729. The Home Mission Society made report of 81 mission churches with 34 dependent stations and 8,538 Sunday-school children. Its income was only £2,500, £700 of which were raised by the churches in co-operation with the society. The aided churches had raised more than £7,000 during the year for various purposes, including £319 for foreign missions. Resolutions were adopted by the Union condemning the opium traffic in India as indefensible on moral grounds, an offense against God, and a terrible wrong to the people of that land; and approving a measure for free education that should provide for the abolition of fees in the higher as well as in the lower standards, place every school receiving grants in lieu of fees under the control of a board of representative managers, and provide for at least one board school within reach of every family in the kingdom.

The Baptist Missionary Society had received during the year £68,123, and had expended £78,684. The present annual expenditure was some £10,000 in excess of the current normal receipts. This was chiefly attributable to the rapid extension of the work on the Congo and in China. Ten years previously there were only 6 missionaries connected with the Congo Mission, and the annual expenditure was only £1,500. In the last year there were 28 missionaries, and the expenditure was £14,592. The staff of 3 missionaries in China ten years ago, costing less than £2,000, had been increased to 21 missionaries, with an expenditure of £10,034. On these two fields alone, therefore, the expenditure had increased by £21,000, while the general contributions of the churches had increased by only £13,000. The plan of associating missionaries into a sort of brotherhood, or forming communities of unmarried men living together and engaging in active evangelistic work, had been successful, and was favorably reported upon. On the report of the executive committee, the society decided to concentrate its work in certain fields by reducing the number of stations and the extent of territory to be covered. In pursuance of this plan, the missionaries will withdraw from a number of stations in India already well occupied by other societies, and confederate the remaining stations, working them together in groups. Five such groups have been arranged for in India. It was also decided to withdraw the missionaries of the society from the service of Anglo-Indian churches, and leave those

churches to their own resources, the principle being stated that the funds of the society "were not contributed for the purpose of relieving Christian people of their individual responsibility as followers of Christ." The plan of union of the society with the General Baptist Missionary Society was agreed to, and now only awaited the ratification of that body at its coming meeting.

The receipts for the Zenana Mission had been £7,592, and the expenditures £105 more than that sum. A boat was employed carrying the ladies of the mission up and down the rivers of Bengal. The receipts of the Bible Translation Society had been £1,230, or £130 less than in the year preceding. The capital of the Baptist Building fund was returned at £43,098, and the whole amount of loans was £196,595. More loans had been granted in the past year than in any preceding one.

General Baptist Conference.—The General Baptist Conference met at Burnley, June 23. The Rev. Dr. Clifford presided. Resolutions were adopted confirming the plan of union with the Baptists. After expressing gratification at observing numerous signs of union among the churches, and at the spread of the principles taught by the founders of the denomination till they "are now the operative faith of the churches of Christendom," the resolutions recite

That in reviewing the last few years of our history we gratefully remember the message which came from the chair of the Baptist Union in 1886, inviting us to consider the desirability of terminating the division of Baptists into "General" and "Particular," as at once inaccurate, misleading, and injurious; the hearty and unanimous vote of the Baptist county associations and of the Baptist Union in favor of the perfect fusion of the Baptists of England; and the courteous and grace-filled endeavors of the Baptist Missionary Society and the Baptist Union to facilitate such a fusion.

That while many of us have felt reluctant to break our associations with a religious past that in its newer development goes back to 1770, and in another form to 1612, yet when we remember the practical union of Baptists which has been recognized in our churches in elections to the pastorate for the last thirty years, the unanimity of the votes of our churches in favor of amalgamation, the steps already taken by our churches to share the work of the county associations, the action of this association in favor of union in 1861-'62, the promise of even greater efficiency in our foreign and home mission work, the other advantages of real Christian unity, we rejoice to accept the invitation offered us.

A resolution offered as an amendment, to the effect that while agreeing to the union of the denominational institutions the association should be perpetuated by retaining the name of General Baptist and continuing the General Conference, was lost by a vote of 4 to 1. A protest which was offered against the action for union was afterward withdrawn.

Autumnal Meeting of the Union.—The autumnal meeting of the Union was held in Manchester, beginning Oct. 5. The proceedings consisted of meetings and discussions in the interest of the Home and Foreign Missionary Societies, the Zenana Mission, and the colleges, without the transaction of business. A resolution was passed recognizing with gratitude the consummation of the Union with the General Baptist Association. Expressions in favor of

closer relations with the Congregationalists and with the free churches generally were received with much interest. A resolution was passed calling on the Liberal party to place the disestablishment and disendowment of the ecclesiastical establishment in Wales among the first acts of justice which the new Parliament is to perform. Another resolution was passed, renewing a previous resolve to protest and agitate the question of free education till all parish schools are placed under the control of the rate payers, and are made thoroughly unsectarian, alike in government and instruction.

BELGIUM, a constitutional monarchy in western Europe which seceded from the Kingdom of the Netherlands in 1830. Prince Leopold, of Saxe-Coburg, was elected King of the Netherlands by the National Congress, and ascended the throne on July 21, 1831. The independence of Belgium was recognized by Austria, Great Britain, Prussia, and Russia in the treaty signed at London on April 19, 1839, which pledges those powers to defend the neutrality and inviolability of Belgian territory. Leopold II, born April 9, 1835, son of the first king, came to the throne on the death of his father, Dec. 10, 1865. The King has three daughters by Queen Marie Henriette, daughter of Archduke Joseph, of Austria; but under the Belgian Constitution they are precluded from succeeding to the throne. By the death in 1891 of the heir-presumptive, Prince Baldwin, the eldest son of the King's brother Philippe, Count of Flanders (see OBITUARIES, FOREIGN), the succession passes to the latter's younger son, Albert, born April 8, 1875.

The Chamber of Representatives consists of 138 members, 1 to every 40,000 of population, elected for four years by the direct suffrage of tax payers paying 42 francs a year in direct taxes, a qualification which limits the franchise to about 1 in 50 persons. The Senate is elected, in the same way, for eight years, and has half the number of members. Half the Senate is renewed at the quadrennial elections.

The Cabinet, constituted Oct. 26, 1884, is composed of the following ministers: President of the Council and Minister of Finance, A. Beernaert; Minister of Justice, L. Lejeune; Minister of the Interior and of Public Instruction, J. Devolder; Minister of War, General C. Pontus; Minister of Agriculture, Industry, and Public Works, L. Debruyne; Minister of Railroads, Posts, and Telegraphs, J. H. P. Vandenpeereboom; Minister of Foreign Affairs, Prince Chimay.

Area and Population.—The kingdom has an area of 29,455 square kilometres, or 11,373 square miles. The population was estimated on Dec. 31, 1890, at 6,147,041. The number of marriages registered in 1889 was 43,759; the number of births, excluding still-births, 177,542; the number of deaths, 119,726; excess of births over deaths, 57,816. The number of immigrants in 1889 was 23,190, and the number of emigrants was 22,150. The population of the chief cities on Dec. 31, 1889, was as follows: Brussels, with suburbs, 477,398; Antwerp, 221,360; Ghent, 152,391; Liège, 146,162.

Commerce.—The value of the general commerce, which includes re-exports, was 3,106,843,078 francs for imports and 3,011,026,216 francs for exports in 1889. The imports by sea were 1,327,-

867,876 francs, and the exports by sea 1,320,292,463 francs in value. The total value of the imports for home consumption was 1,556,400,000 francs, and of the exports of Belgian products 1,458,500,000 francs. The values of the principal classes of special imports in 1889 were as follow: Cereals, 250,863,000 francs; textile materials, 195,291,000 francs; vegetables; 93,205,000 francs; timber, 65,001,000 francs; live animals, 53,648,000 francs; mineral substances, 70,652,000 francs; gums and resins, 61,698,000 francs; hides and skins, 65,500,000 francs; textile manufactures, 51,070,000 francs; metals, 54,424,000 francs; coffee, 47,565,000 francs; butter and eggs, 37,481,000 francs; meat, 20,105,000 francs; other animal products, 34,304,000 francs; textile yarns, 26,270,000 francs; wine, 22,898,000 francs; oils, 17,749,000 francs; fish, 12,914,000 francs; rice, 14,551,000 francs; waste and manure, 25,235,000 francs. The leading exports of domestic produce and manufacture in 1889 were of the following values: Yarns, 147,507,000 francs; machinery, etc., 98,069,000 francs; raw textiles, 92,844,000 francs; coal, 90,998,000 francs; iron, 74,981,000 francs; sugar, 73,349,000 francs; grain, 72,874,000 francs; textile manufactures, 63,344,000 francs; hides and skins, 60,408,000 francs; stone, 58,073,000 francs; vegetables, 56,975,000 francs; glass, 46,340,000 francs; various animal substances, 34,175,000 francs; zinc, 31,720,000 francs; steel, 31,442,000 francs; chemicals, 31,198,000 francs; meat, 27,501,000 francs; various mineral substances, 23,683,000 francs; live animals, 20,761,000 francs; fire-arms, 18,098,000 francs; paper, 14,390,000 francs. The share of each of the principal commercial countries in the Belgian special commerce in 1889 is shown in the following table, giving the imports and exports from and to each country in francs:

COUNTRIES.	Imports.	Exports.
France.....	822,747,000	352,794,000
Great Britain.....	198,499,000	299,595,000
Netherlands.....	205,487,000	216,934,000
Germany.....	172,751,000	255,572,000
United States.....	118,246,000	43,299,000
Russia.....	113,466,000	10,757,000
Roumania.....	96,798,000	7,247,000
Argentine Republic.....	56,887,000	41,796,000
Sweden and Norway.....	42,619,000	10,044,000
Italy.....	19,757,000	45,158,000
India.....	64,366,000	8,968,000
Brazil.....	20,092,000	14,252,000
Spain.....	15,607,000	22,363,000
Peru.....	35,107,000	
Switzerland.....		29,785,000
Uruguay.....	15,593,000	
Portugal.....		15,484,000
Turkey.....		15,409,000

The total trade compared with that of the previous year shows an increase of 4 per cent. The imports from France increased 12 per cent., and the exports to France 3 per cent. The exports to Germany increased 47 per cent. Those to the United States showed a decline of 17 per cent., while to the other parts of America they increased 16 per cent. The imports from England increased 9 per cent., and the exports to England 17 per cent. The total imports for domestic consumption showed an increase of 1 per cent. over the value in 1888, and the exports of Belgian goods increased 17 per cent. There was a marked increase in the imports of wood,

grain, potatoes, fish, minerals, iron, lead, chemicals, oil cake, oil seeds, beet root, resin and petroleum, and in the exports of arms, vegetables, linen thread, cast steel, glass, wrought iron, refined sugar, and stones.

Navigation.—During 1889 there were 7,010 vessels, of 5,158,436 tons, entered, and 6,994, of 5,145,595 tons, cleared, at Belgian ports. The largest share, 1,307,804 tons entered and 1,489,264 cleared, belonged to Great Britain, the United States coming next, with 474,104 tons entered and 481,779 cleared. The commercial navy on Jan. 1, 1890, numbered 42 steamers, of 65,951 tons, and 9 sailing vessels, of 4,271 tons.

Railroads, Posts, and Telegraphs.—On Jan. 1, 1890, there were 3,209 kilometres of railroads in Belgium under the management of the Government, and 1,261 kilometres worked by private companies, making a total length of 4,470 kilometres, or 2,793 miles. The number of passengers on the state lines in 1889 was 59,957,199. The gross receipts for that year were 136,919,693 francs on the state lines and 40,223,562 francs on the companies' lines, and the expenses for the state were 75,235,052 francs, and for the companies 19,858,345. The capital expended on the state system was 1,301,452,773 francs.

The number of letters carried in the mails during 1889 was 95,467,361, besides 17,021,382 official letters; the number of post cards, 34,331,674; of printed inclosures, 68,457,974; of newspapers, 91,546,377; receipts, 16,135,714 francs; expenses, 9,320,296 francs.

The total number of dispatches transmitted by the telegraphs during 1889 was 7,737,353. The length of telegraph lines in operation at the end of that year was 4,054 miles, with 19,332 miles of wire. The receipts for the same year were 3,336,203, and the expenses 3,992,340 francs.

Finances.—The budget for 1891 states the total amount of the ordinary revenue of the Government as 346,612,721 francs, of which 24,333,000 francs are derived from property taxes, 19,340,000 francs from personal taxes, 6,680,000 francs from trade licenses, 600,000 francs from mining royalties, 27,923,331 francs from customs, 40,934,504 francs from excise duties, 19,010,000 francs from probate duties, 24,970,000 francs from registry fees, etc., 5,900,000 francs from stamps, 1,453,000 francs from various indirect taxes, 139,000,000 francs from railroads, 3,900,000 francs from telegraphs, 10,380,000 francs from the post-office, 2,505,000 francs from navigation and pilot dues, 1,280,000 francs from domains and forests, 15,098,000 francs from funds and securities, and 3,300,786 francs from repayments. The total ordinary expenditure was estimated at 338,381,503 francs, of which 102,096,726 francs are allocated to interest and sinking fund of the debt, 4,686,155 francs to the civil list and dotations, 17,111,075 francs to the Ministry of Justice, 2,482,655 francs to the Ministry of Foreign Affairs, 22,965,915 francs to the Ministry of the Interior and of Public Instruction, 17,016,597 francs to the Ministry of Public Works, 104,094,123 francs to the Ministry of Railroads, Posts, and Telegraphs, 46,588,462 francs to the Ministry of War, 15,523,895 francs to the Ministry of Finance, 4,267,400 francs to the Gendarmerie service, and 1,548,500 francs to repayments, etc.

The total amount of the consolidated debt in 1891 was 1,785,185,007 francs, in addition to which there were annuities amounting to about 30,000,000 francs, and a floating debt of 20,000,000 francs. The debt was incurred mainly for the construction of railroads and other productive works. During 1890 the debt was increased by 33,500,000 francs to provide for the new fortifications on the Meuse. The expense of these fortifications was originally estimated by General Brialmont at 24,000,000 francs, but by the middle of 1891 there had already been expended 72,000,000 francs, and additional credits were voted for completing the line of forts.

The Army.—The strength of the Belgian army on the peace footing, according to the military budget for 1890, is as follows:

TROOPS.	Officers.	Men.	Total.
Infantry.....	1,888	23,690	80,778
Cavalry.....	868	5,680	6,048
Artillery.....	509	7,862	8,371
Engineers.....	59	1,890	1,479
Administration.....	74	820	894
Total.....	2,928	44,642	47,570

This enumeration does not include the general staff, numbering 474. The Gendarmerie, of whom there are 2,449, form a part of the regular army in time of war. The number of horses maintained in time of peace is 7,200, besides 1,636 for the Gendarmerie. The artillery has 200 guns in peace and 240 in war time. The available strength of the army for war is 154,780 men, not including the Civic Guard, or volunteers, who numbered 42,827 in 1889.

The Suffrage Question.—The Moderate Liberals, who were in power before 1884, with their chief, Frère-Orban, as Prime Minister, and who carried through the scheme of state education that has been partly annulled by their successors, were unwilling to enlarge the franchise, because the new voters would add sufficiently to the strength of their opponents to drive themselves from power. Since the accession of the Conservative or Clerical party the conflict over secular education has been cast into the shade by the labor question and the agitation for electoral reform. A strong Radical party has grown up among the intelligent middle classes, whose watchword is universal suffrage, and in this demand it is supported by the Socialist Labor party, which, though deprived of the ballot to a great extent, has made its power felt in Belgium by sharp and protracted labor struggles and clamorous political agitation. Frightened by these new political elements, the Clericals have been averse to offering a moderate scheme of revision that, if it should pass, would only open the door for a wider extension of the suffrage. The Moderate Liberals were equally reluctant to share the voting privilege with the masses. The apathy of the ruling classes incensed the people, and gave such impetus to the agitation that it could no longer be ignored. The question of national defense, which has become urgent since the virtual repudiation by England of her pledge to defend Belgium from invasion, complicated the matter; for not only the Radicals but eminent military men declared that compulsory military service, without which Belgium can not have

an efficient army, will never be carried as long as the franchise is restricted to the class that is interested in preserving its immunity from personal service. In November, 1890, when the Chamber met, it had placed before it a proposition to amend Article XLVII of the Constitution by extending the franchise to all householders, which was referred to a committee. The passage of a proposal to revise any part of the Constitution by a majority vote necessitates a dissolution of Parliament and the convocation of a new one, in which a two-third vote is required in each Chamber before the amendment can become a law. The dilatory proceedings of the ministers and Chamber in the matter caused the champions of popular suffrage to suspect that the intention was to postpone the question indefinitely. Before the reassembling of the Chamber the Liberal Association, representing the middle class in Brussels, arranged for monster meetings, to be followed by a street demonstration on the day that the Chamber reopened, Jan. 20. The burgomaster having declined to prohibit the demonstration, the ministry called out two classes of the reserve to prevent disorder. The men were all in camp within forty-eight hours, showing that mobilization is well prepared; but it seemed doubtful whether the army, recruited from the class demanding the right to suffrage, could be depended on to repress the popular excitement. In the Chamber, where the Moderate Liberals and Radicals, forming the united Opposition, held only one third of the seats, M. Janson, the Radical leader, offered a bill to secure universal suffrage. The Moderate Liberals, under M. Frère-Orban and M. Bara, expressed themselves in favor of a considerable extension, based upon educational and other qualifications. M. Janson's plan was referred to the committee, but only for the purpose of being shelved. The Workmen's party made the right to vote their sole demand, and, while holding themselves independent of all other political bodies, appealed to the sympathies and fears in turn of the Liberals and Conservatives. They sent a petition asking the King to intervene, and another to the bishops, wherein they declared it to be "a monstrous iniquity, carried out in utter disregard of the Catholic faith, which permits 130,000 Belgians, who are no better than their fellow-citizens, to be absolute masters." They announced beforehand a general strike of all the working people in the country as a demonstration in favor of universal suffrage, and many of their employers called on the Government to grant their demand and avert such a calamity. To prepare for the strike, they not only saved up their wages, but obtained assistance from outside by means of a subscription fund. Every sympathizer who contributed a penny to this fund received a little green ticket as a receipt and a badge of his opinions. This strike fund was swelled by contributions from abroad. In March, M. Beernaert presented a scheme of revision, to which the Government would agree if the Liberals would accept it, that would enlarge the electorate so as to embrace about 600,000 persons by granting the right of voting to all persons who rent an unfurnished lodging. Coupled with this was a proposal for proportional representation of parties in elections to the Chamber and to the pro-

vincial and communal councils. It was also proposed to transfer the right of electing Senators from the people to the provincial councils, and to give the King an absolute veto on all legislation. This scheme was denounced as a proposal, not to increase, but to curtail the political power of the people. The committee of the Chamber discussed a proposition to make the age of twenty-five and the payment of ten francs a year in direct taxes qualifications for the parliamentary franchise, but continued to delay its report. The members of the Labor party grew incensed at the slowness of the Cabinet and its supporters in the Chamber. The 1st of May passed without the general strike being declared, and it was announced that the General Council of the Labor party were opposed to it; but on the following day men began to leave their work. In the Charleroi coal district 30,000 went out. They were followed by the miners and foundrymen of Liège, the operatives of Monceau and Marchienne, and the carpenters and other trades of the capital. On May 5 the Labor Council and the Miners' Federation consented to support a general strike in all four coal basins. Dynamite cartridges were exploded by strikers in vengeance on men who continued at work. In the provinces, collisions took place between strikers and the authorities. The Labor Council, compelled to take the lead in a movement that it was unable to resist, ordered a strike of dock laborers at Ghent, Antwerp, and Ostend, to prevent the landing of imported coal, and called out the metal workers of Brussels and the mechanics in all the large cities. At Seraing, Herloz, and other places rioters were wounded in fights with the gendarmes. Although industrial demands were put forward by the miners, the declared object of the great strike was to enforce the demand for unrestricted suffrage. It abated when the parliamentary committee hastened to make their report and the ministers pledged themselves to electoral reform. In a few weeks the strike was over, having accomplished none of its objects. The final recommendations of the committee were announced at the last sitting of the Chamber, on Aug. 16. The report condemned universal suffrage and commended a franchise based on occupancy, as in England, and proposed the postponement of revision till the parties could agree on a communal and provincial electoral system.

Diplomatic Relations.—An international office for the publication of the customs tariffs of all countries in the five principal European languages began its work on April 1, 1891, at Brussels. The French Government having denounced the commercial treaty with Belgium, which lapses on Jan. 31, 1892, the Belgian Government retaliated by a notification that the convention of navigation between the two countries and the convention for the guarantee of property in literary and artistic works, models, designs, and trade marks would expire on the same date. A convention was concluded with Bulgaria containing the same provisions as the new Anglo-Bulgarian commercial treaty. All the powers, excepting the United States, France, and Portugal, ratified the general act and declaration of the Brussels Anti-Slavery Conference of 1890. The American Government, which was

sustained by France in its objections to the right of search, obtained an extension of the period allowed for ratification. Separate conventions made by France and Portugal and the Congo State regulate the rates of duties in the Congo basin (see CONGO FREE STATE).

Socialist Labor Congress.—The first regularly convened International Trade Union Congress, open to all nations, was held at the Paris Labor Exchange in 1886. It had been preceded by a conference of labor representatives from France, Italy, Spain, and England, where the project of holding a congress was discussed and approved. In 1888 the second congress took place in London, and it was there decided to meet again in the following year at Paris during the World's Fair. This third congress was organized by the French Possibilists, and was attended by the English Trade Unionists and the English Socialists. A heated discussion arose on the question of fusing with the Marxist Socialists, who had organized a separate international labor congress, in which 88 German Socialists, including several members of the Reichstag, took part. The main feature of the Possibilist congresses had been the harmony and co-operation of Socialists with Trade Unionists and other non-Socialistic bodies. Anxious to preserve this alliance, the Possibilists had enacted rules that were designed to prevent the congresses from being swamped by delegates from a multitude of Socialist bodies and committed to principles unacceptable to the numerous working-men's associations in Great Britain that are opposed to Socialism. The rules were these: (1) No society can be represented at any of the congresses unless it has been in existence for a full year previous; (2) the delegates of each nationality shall judge of the *bona fide* character of the societies of their own country seeking to be represented and pass upon the credentials of their countrymen; (3) vote in the congress shall be taken by nations, the majority of delegates from each country deciding what its vote shall be on each motion; (4) all questions to be discussed shall be communicated to the organizing committee in time to be printed and sent around to all the societies participating in the congress at least six weeks before it assembles. It was the refusal of the Marxists to assent to these rules that prevented the two congresses from uniting in 1889. The Belgian delegates gave an invitation to the Possibilists to hold their next congress at Brussels in 1891 under the auspices of the Belgian Labor party. This invitation was accepted, and the Belgian organization undertook to act as a correspondence bureau to unite all parties during the intervening two years. The Marxists arranged to hold a congress in 1891 in Switzerland.

Without the consent or knowledge of the English trade bodies, the Belgian committee resumed negotiations for a fusion with the Marxists, and persuaded the Swiss committee to give up the plan of organizing a separate congress; but to obtain this result it was necessary to abandon the four rules. The English Labor Electoral Association, representing a large number of the strong and active trade unions of England, at its annual convention unanimously adopted a motion that the societies present should go to

the Brussels congress, but insist when they got there that the rules laid down by the Possibilist congress should be carried out. Previous to that, and before the negotiations for a union with the Marxists were made known, the annual Congress of British Trade Unions at Liverpool had voted to take part in the Brussels congress, and instructed the Parliamentary Committee to take every means in its power to make the congress a success. When fully informed of the change in the purpose and organization of the congress, the Parliamentary Committee met and agreed that under the altered circumstances they were not bound by the Liverpool vote to send representatives to Brussels, and that they would abstain. The very name of the congress was calculated to keep away English trade unionists, except the New Unionists, who have imbibed Socialistic principles; for it was no longer the International Working-men's Congress, but the International Socialist Working-men's Congress. Moreover, the date was changed from Aug. 18 to Sunday, Aug. 16, which was inconvenient to Englishmen, because they would have to lose a part of the previous week's work, and objectionable to many of them for religious reasons. The following list of subjects was announced as the *agenda* of the Congress:

(1) The present condition of the laws protecting workers from the national and international point of view, and the means to be employed to render such laws more effective.

(2) The right of coalition, how is it secured? The international aspect of strikes, boycotting, and the trade-union movement.

(3) What is the position and duty of the working classes with respect to militarism?

(4) The attitude which the organized workers of all countries should assume with regard to the Jewish question. (Proposed by the American Union of Workers speaking the Hebrew language.)

(5) How parliamentarism and universal suffrage can be utilized to the advantage of the Socialist workers' cause. The tactics which should be employed so as to bring about the emancipation of the workers, and the means by which this can be realized. (Dutch proposal.)

(6) On the alliance of workmen's Socialist parties with the middle-class political parties.

(7) On the suppression of piece work.

(8) The 1st of May international celebration to be consecrated to the principle of the eight-hour working day and the international regulation of labor, together with the universal affirmation to be made by the proletariat in favor of the maintenance of peace among all nations.

(9) Adoption of a general and uniform designation to indicate all the Labor parties in the world. (The Central Revolutionary Committee of Paris proposes "The International Socialist Party." The Belgian workmen's party proposes "The International Socialist Workmen's Party.")

(10) Serious and practical organization: (a) International correspondence between workmen; (b) universal working-class statistics; (c) international understanding between workers of all trades, to be secured by the creation in each nation of a syndical committee and of an international syndical (or trade-union) committee; (d) by the regular communication of different information, and by means of an international Socialist almanac, translated into several languages and appearing annually; (e) by Socialist propaganda and agitation in all countries.

(11) Proposal to hold the next International Congress in Chicago in 1893, and an international demonstration in that town. Designation of the next International Socialist Workmen's Congress.

The congress met on the date set at the Maison du Peuple, the hall of the Belgian Labor party in Brussels. Every country in Europe was represented, excepting Russia and Portugal. In addition to the 188 Belgian delegates, 77 presented themselves from France, 42 from Germany, 29 from Great Britain, 11 from Austria, 9 from Holland, 6 from the United States, 6 from Switzerland, 5 from Poland, 5 from Roumania, 3 from Sweden and Norway, 3 from Denmark, 2 from Italy, 2 from Hungary, and 1 from Spain. The Marxists, Blanquists, and Possibilists of France were all strongly represented. Among the German delegates were the Social-Democratic leaders Bebel, Liebknecht, and Singer. From England came prominent Socialistic agitators and also representatives of trades councils and unions. The American delegates were pronounced Socialists. Anarchists and Revolutionary parties were excluded. The speeches, limited to ten minutes, were translated immediately after delivery for the benefit of all sections, and the voting was by nationalities. The sessions extended over a week. The Marxists were in the majority, but they showed a desire to frame the resolutions in such a way as to be acceptable to the British trade unionists, at whose suggestion these international congresses were inaugurated. Mr. Sanial, delegate of the Central Labor Union of New York and of American Socialists generally, who described America as a country in which misery is increasing so fast that it is becoming a hell for working men, urged the claims of Chicago as the meeting-place for the next congress; but Switzerland was selected by the committee for the next regular congress, which will be held in the first week of August, 1893. In deference to the non-Socialistic English unions, it was decided to leave the title of the congress to be determined by that body. A proposition that no person should be permitted to attend as a delegate whose expenses were not borne by the organization that he represented was taken into favorable consideration. The intention was announced of sending some delegates from the Continent to the separate Socialist congress that is to be held in Chicago in 1893. It was resolved to organize a general international demonstration in favor of an eight-hour day, to take place on May 1, 1892. A resolution inviting the Socialist and Labor parties of all countries "to affirm in their programmes the complete equality of the two sexes and to demand the concession to women of the same political and civil rights as are enjoyed by men, and the repeal of all laws placing women outside public rights," was passed, with only three dissenting votes. The resolution in regard to labor-protecting legislation brought out the differences of opinion between the Continental workmen and the British delegates. Mr. Kazan, who represented the Hebrew trade unions of the United States, said: "We are not going to cringe and fawn for legislation, but will extort it from the capitalist class, and abolish the wage system." The British members objected to amendments embodying particular Socialistic demands, and the congress finally adopted unanimously the following resolution:

This congress, recognizing the existence of a class struggle, and convinced that as long as class rule pre-

vails the emancipation of the working classes will be impossible, declares that the laws enacted and the decrees issued in various countries since the Paris International Congress, held in 1889, do not in any respect meet the aspirations of the workers. That although the Berlin conference, as admitted by those who themselves initiated it, met under the pressure exerted by the international labor congresses, and may therefore be regarded as an important concession to public opinion, the results have demonstrated that existing governments do not wish to effect necessary reforms; and that, on the other hand, the resolutions of the Berlin conference have been used as a pretext by certain manufacturing countries to arrest the development of labor-protective legislation by invoking the decisions of the Berlin conference and pointing to the defects in the legislation of competing countries. Moreover, this congress affirms that in cases in which legislation is not defective, its application is allowed to remain inoperative.

For these reasons, this congress urges upon the workers of all countries to agitate for the realization of the programme laid down by the Paris congresses, if only to make it clear to the workers that the governing and exploiting classes are hostile to legislation effectively protecting the interests of labor.

Whereas it is necessary to give to the international labor movement a common impulse, especially in the direction of protective labor legislation, therefore be it resolved by this congress:

(1) To organize in every country a permanent commission of inquiry concerning the conditions of labor in its relation to working-class legislation.

(2) To collect, collate, and exchange all necessary information, with a view to the development and unification of all the said legislation.

(3) This congress recommends the wage workers of the whole world to unite their efforts against the domination of capital, and, wherever they enjoy political rights, to exercise them with the object of gaining their emancipation from wagedom.

Declarations in condemnation of piece work and of the subcontract system were approved. Mr. Kazan was unable to obtain a clear declaration from the congress on the Jewish question. The committee recommended a resolution "condemning the anti-Semitic agitation as a device of the capitalist class and of reactionary governments to divert the Socialist movement from its course, and to sow division among the workers, and affirming that the only way to achieve the emancipation of the Jewish working classes was to effect the amalgamation of the Socialist parties in the respective countries." This was altered on the motion of British delegates to read "the amalgamation of the Socialist and Labor parties," and at the suggestion of M. Argyriades, a French delegate, who denounced Jewish banks and Jewish financiers as oppressors of labor, an amendment was accepted to the effect that the congress "condemns both anti-Semitic and philo-Semitic agitation." The resolution regarding militarism was a sweeping one in favor of universal disarmament and peace, condemning wars and the maintenance of standing armies as a device to bolster up the power of capitalism.

BOLIVIA, a republic in South America. The legislative power is vested in a Congress, consisting in a Senate and a House of Representatives, and the executive power in a President, elected for four years. Don Aniceto Arce was made President in 1888. The country is divided into 8 departments, each under the administrative and military authority of a prefect appointed by the President.

Area and Population.—The area, which before 1880 was 842,000 square miles, has been reduced, by the cession of the sea-coast province of Antofagasta to Chili, to 772,548 square miles. The population is about 2,300,000, one fourth of whom are whites, one fourth mestizos, and one half Indians. La Paz, which is the seat of Government, has about 60,000 inhabitants.

Commerce and Production.—The foreign commerce of Bolivia is large, and has greatly increased in recent years. The amount is not known, the estimates being based on statistics furnished by Chili, Peru, and the Argentine Republic. The exports in 1885 amounted to \$9,800,000, and the imports to \$7,000,000. In 1890 the exports had increased to about \$20,000,000, while the imports were \$15,000,000 in value. The foreign trade is mostly with England, Germany, and France. The share of the United States is very small. The direct shipments from the United States to Bolivia in 1890 were \$11,002; but this does not represent the extent of the trade, for considerable quantities of dry-goods, drillings, kerosene, hardware, and machinery reported as sent to Peru, or the other republics bordering on Bolivia, are consumed in that country, and many of the imports that are credited in the trade reports of the Treasury Department to those neighboring countries are the produce of Bolivia. The silver mines of Bolivia are supposed to be the richest in the world. Those at Potosi from the time of the Spanish conquest have yielded over \$3,000,000,000. Other rich deposits are found at Oruro, Aullaga, and in other places. In 1881 the export of Bolivian silver through Buenos Ayres was valued at \$17,000,000, and in 1882 at \$21,000,000. In 1888 they were \$17,064,218; in 1889, \$12,145,545. There are valuable deposits also of tin, lead, bismuth, mercury, copper, platinum, zinc, magnetic and other iron ores, alum, salt, magnesia, and other minerals, and a large variety of precious and semi-precious stones. The export of copper ore and regulus amounts to about \$240,000 a year. Vegetable products of both the temperate and tropical zones thrive in Bolivia. Enough wheat is grown for domestic consumption, and a considerable surplus is exported. The coffee produced in Bolivia is of superior quality. Next to silver, the largest export is cocoa, the product of which in 1885 was valued at \$1,718,320. After this comes India-rubber, which is of a very high grade, and exists in inexhaustible quantities. Another valuable product is cinchona bark; the number of trees has been estimated at 5,000,000, and the annual output at 200,000 pounds.

Communications.—Bolivian commerce has been retarded by lack of transport to the coast. There is now railroad communication with the Chilean port of Antofagasta by means of a line that crosses the frontier at Ascotan, and has been extended for 400 miles on Bolivian territory, nearly to Oruro in the center of the plateau. It will be continued to the agricultural district of Cochabamba, and a branch will connect it with Potosi. The Peruvian railroad that has been built from Mollendo, on the coast, to Puno, on Lake Titicaca, is to be joined by a line from La Paz. Communication with the Atlantic Ocean is facilitated by the extension of one of the Argentine railroads to the frontier of Bolivia. A

project for the improvement of the tributaries of the Amazon and La Plata to afford water communication with the Atlantic is regarded as feasible, and likely to be carried out.

Finance.—Bolivia is financially better off than any other South American state. The foreign debt is being rapidly paid off; it had been reduced to \$622,121 in 1890, while the internal debt was only \$4,450,000. About one third of the revenue is derived from customs and one third from a tribute collected from the aboriginal tribes. The receipts of the treasury for the financial year 1890 were estimated at \$3,624,200, and the expenditures at \$3,734,814. About one third of the expenditure goes to support a military force of 124 officers and 900 soldiers.

Relations with Chili.—Bolivia was the first country in either hemisphere to recognize the belligerent rights of the Junta de Gobierno (see CHILI), which was done by proclamation on June 30, 1891. While this act was advantageous to Bolivia's commerce, as the Congressional party held the northern provinces of Chili bordering on Bolivia and could deny her access to the sea-ports, yet it involved the risk of a war with Balmaceda in the event of his success in the civil war. It strengthened the position of the Junta, both in Chili and in its relations with foreign countries; and in return the Bolivian Government is said to have obtained a treaty of commercial reciprocity, whereby no transit duties are levied on goods imported into Bolivia through Antofagasta or other Chilean ports; and Bolivia, on her part, acknowledges the perpetual sovereignty of Chili over the annexed provinces, and agrees to admit Chilean products free of duty.

BRAZIL, a republic in South America, proclaimed on Nov. 15, 1889, when Dom Pedro II, the Emperor, was dethroned by a popular rising and exiled with his family. A Provisional Government was instituted, which framed and published a new Constitution, that was ratified by the first National Congress, convened on Nov. 15, 1890. By this instrument the Brazilian nation constituted itself into a federal republic, under the name of the United States of Brazil. Each of the old provinces was declared a self-governing State, to be administered under a republican form of government, with power to impose taxes, and subject to no interference from the Central Government, except for purposes of national defense or the preservation of internal order or for the execution of Federal laws. Legislation relating to customs, paper currency, and postal communications is reserved to the Federal Government. The right of suffrage is secured to all male citizens over twenty-one years old, with the exception of beggars, persons ignorant of the alphabet, soldiers in actual service, and persons under monastic vows, registration being the only prerequisite. The executive authority is vested in the President, who must be a native of Brazil over thirty-five years of age. He is elected by the people directly for the term of six years, and is not eligible for the succeeding term. In all the States the election takes place on March 1 of the last year of the presidential period. The votes are counted at the State capitals, and the candidate receiving the absolute majority of the popular votes is declared elected by Congress at the opening ses-

sion, and is inaugurated on the 15th of November following. With the Vice-President it is the same. The President may be removed by the Senate, sitting as a tribunal under the presidency of the chief justice, on articles of impeachment presented by the Chamber of Deputies. The President has power to appoint and remove the members of his Cabinet and make all Federal civil appointments, and can appoint diplomatic representatives and Federal judges with the consent of the Senate. He is commander-in-chief of the army and navy. He has power to make war or peace only on the authorization of Congress. Ministers address their reports to the President, and can only communicate with the Chambers by letter or in conference with commissions. The Vice-President of the Republic is President of the Senate. Senators are elected by the Legislatures of the States for nine years, three from each State, one retiring and his successor being chosen every three years. Senators and Deputies receive equal salaries. The Chamber of Deputies has the initiative in all laws relating to taxation. Deputies are elected for three years by direct popular vote in the proportion of one to every 70,000 inhabitants. Congress assembles on May 3 of each year, and remains in session four months. The President can call an extraordinary session. The present Chamber has 202 members, the State of Minas-Geraes sending 37; Bahia and São Paulo, each 22; Rio de Janeiro and Pernambuco, 17 each; Rio Grande do Sul, 16; Ceará and the Federal District, 10 each; Pará and Maranhão, 7 each; Alagoas, 6; Parahyba, 5; Rio Grande do Norte, Piahy, Sergipe, Paraná, and Santa Catharina, each 4; Goyaz, 3; and Matto Grasso and Esperito Santo, 2 each. According to the Federal Constitution, the executive, legislative, and judicial authorities of each State must be separate and independent; the Governor and members of the Legislature must be elective; and judges must not be elective nor removable from office except on impeachment and judicial sentence. The Federal District, or *Município Neutro*, consisting of the city of Rio and its environs, an area of 538 square miles, is administered by the Federal Government. At some future time the Capitol is to be removed to a district of 14,400 square kilometres, about 75 miles square, reserved as the property of the Union in the center of the republic. The present Federal District will then be constituted as a State. By vote of the Legislatures in two consecutive sessions and with the consent of Congress, States can divide themselves or amalgamate with other States. The States alone can levy taxes on exports of their own products, land, inheritances, and industries. Amendments to the Federal Constitution may be presented by one fourth of the members of either House of Congress, and if they are passed to a third reading by a two-thirds vote in both Chambers, they will be considered again in the following year, when they must be passed a second time in three readings by a two-thirds majority of both Houses before they become law. Or if an amendment is asked for by two thirds of the States after having been proposed and sanctioned by a majority vote given by their respective Legislatures within the same year, then it must be proposed in Congress, and is adopted when it

receives a two-thirds vote after three discussions in each Chamber. No proposition shall ever be admitted to consideration which tends to abolish the federative republican form of government or the equal representation of the States in the Senate. The original draft declared clergymen, magistrates, police and army officers, and Federal office holders incapable of sitting in either House of Congress, but all restrictions were removed by the Constituent Assembly, except that candidates must be registered as voters, and must have been citizens four years to become members of the Chamber and six years to be eligible for the Senate. It is declared that no sect or church shall receive aid from the National or State governments, and that no Brazilian shall be debarred from exercising civil and political rights or exempt from civic duty on account of religious belief or duty. The clauses forbidding the establishment of new convents or monastic orders and proscribing the Jesuits were expunged. The protests of Cardinal da Costa, the primate of Brazil, against the civil marriage clause, the secularization of cemeteries, and the exclusion of religious teaching from public schools, failed to impress the Congress, and, while all religious disabilities were removed, these clauses were left standing.

Marshal Deodoro da Fonseca, the head of the Provisional Government, was confirmed in the presidency by the Constitutional Congress, and General Floriano Peixoto was elected Vice-president. Their term of office expires in 1894. The Cabinet first appointed by President Fonseca consisted of the following officers: Aristides da Silveira Lobo, Minister of the Interior; Dr. Ruy Barbosa, Minister of Finance; Benjamin Constant Botelho dei Magalhães, Minister of War; Admiral Eduardo Wandelkolk, Minister of Marine; Quintano Bocayuva, Minister of Foreign Affairs; Dr. Demetrio Nunez Ribeiro, Minister of Commerce and Agriculture; F. de Campos-Salles, Minister of Justice. They still held office at the beginning of 1891, with the exception of the Ministers of Agriculture and the Interior, who were succeeded by Dr. Francisco Glycerio and Dr. Cesare de Faria Alvin. Meanwhile B.C. Botelho dei Magalhães was appointed Minister of Public Instruction, Posts, and Telegraphs, resigning the charge of the War Department to Gen. F. Peixoto. Early in the year this statesman—familiarily known as Benjamin Constant, revered by the Republicans as their intellectual leader and the chief organizer of the revolution—died in office, and by one of the temporary provisions of the new Constitution, following the article granting a pension to the ex-Emperor “sufficient to guarantee him a decent subsistence,” it was decreed that Dr. Benjamin Constant’s house should be preserved as a national monument.

Area and Population.—The area of Brazil is 3,209,878 square miles, and the population was officially estimated in 1888 at 14,002,335, indicating an increase of 41 per cent., or 2.56 per cent. per annum, since the census of 1872; but as that census was incomplete, the rate of growth has probably been less. According to its returns, there were at that time 3,787,289 whites, 3,801,787 mestizos, 1,954,452 negroes, and 386,955 Indians. In the northern provinces there is a large

Indian element, and in the States of Rio de Janeiro, Bahia, Minas-Gerães, and Pernambuco negroes predominate in numbers. In 1850 the number of slaves held in Brazil was estimated at 2,500,000. An official enumeration in 1887 gave the number of negroes still held in slavery as 723,419. By a measure passed in the following year all were declared free, and compensation to the owners was refused. The present number of wild Indians is estimated to be about 600,000. The city of Rio had 357,332 inhabitants in 1885. The immigration, which was 181,268 in 1888, fell away to 65,161 in 1889, and 21,088 in the first six months of 1890, owing to yellow fever and to complaints of hardships endured by immigrants, which were investigated by the Italian Government. Of the immigrants in 1889, 34,930 were Italians, 15,240 Portuguese, 8,662 Spaniards, 1,903 Germans, 584 French, 470 Austrians, 387 Belgians, 126 Swedes, 76 British, and 2,793 from other countries. During 1890 the Provisional Government granted concessions of public lands equal to the British Islands in area, with the view of promoting immigration, and Senhor Glycerio, the Minister of Agriculture, contracted for the introduction of over a million families, agreeing to pay the shipping company \$25 for every adult immigrant, and a subsidy of \$20,000 to companies bringing at least 10,000 settlers in a year. For six months after their arrival, immigrants are under the special protection of the state, which will support them when necessary. They are promised farms at from \$12 to \$25 an acre, with houses ready for occupancy and seed and implements thrown in, and ten years are given them to pay off the debt. These extraordinary inducements stimulated immigration greatly. Portuguese, Spaniards, Italians, Russians, and British and Irish came in such numbers that many suffered hardships from overcrowding in the barracks provided by the Government. A great number sickened from change of climate and food, and a large proportion failed from inability to till the land.

Commerce and Production.—Coffee and sugar are the chief commercial products of the country. Cotton is cultivated also, and numerous cotton mills have been established. The state has offered a guarantee of interest to sugar factories, and in 1890 many new ones were started, concessions being granted for 58,650,000 milreis of capital in the first nine months. The number of cattle in Brazil is about 17,000,000, and hides are exported largely from the southern province. In the swamps of the Amazon valley great quantities of rubber are gathered. High duties are paid on imports, and on several of the chief products of the country export duties are collected. Of the imports, which consist mainly of cotton and woolen fabrics, preserved meat and fish, wines and spirits, breadstuffs, coal, iron and steel, and linen cloth, Great Britain supplies about 45 per cent. of the total value, France 17 per cent., and Germany 14 per cent. Of the exports, about one third go to the United States, one third to Great Britain, one tenth to France, and an equal proportion to Germany. The value of the exports from Rio in 1889 was 104,611,321 milreis (the value of the milreis varies from 35 to 55 cents, according to the rate of exchange). Almost the sole export from that

point is coffee, of which 4,526,906 bags of 60 kilos were shipped from Rio, Santos, and Victoria in 1889-90. During the same fiscal year 104,536 tons of sugar were exported from Pernambuco. The export of rubber from Pará and Manaos in 1889 was 18,682 tons, and the number of hides exported from Rio Grande do Sul was 749,301. Cotton of the value of 15,000,000 milreis, tobacco for 5,000,000 milreis, and Paraguay tea for 3,500,000 milreis, were exported in 1887.

During 1889 the number of vessels entered at the port of Rio de Janeiro was 1,375; the tonnage, 1,759,911; the number cleared, 1,181; tonnage, 1,587,011. The merchant marine in 1890 numbered 506 vessels, with an aggregate capacity of 140,066 tons, of which 121 were steamers of 67,707 tons.

Communications.—The length of completed railroads in May, 1889, was 5,331 miles. Nearly all are single-track lines of one-metre gauge. The state owns 2,091 miles. Most of the lines belonging to companies have a guarantee, usually of 6 or 7 per cent. interest, either from the General Government or from the States through which the lines run. A complete national system of railroads, giving an outlet to all the productive sections of the country, is one of the projects of the new Government. A scheme embracing the construction of 20,000 kilometres, or 12,500 miles, has been approved, and the outlay for one fifth of the whole appears in the budget for 1892.

The telegraph lines, which belong to the Government, had a total length in 1889 of 10,720 kilometres, with 18,489 kilometres of wire.

The number of letters passing through the post-office in 1888 was 14,875,522; of newspapers, 16,149,092; receipts for eighteen months, 2,210,000 milreis; expenses, 2,760,000 milreis.

The Army and Navy.—The peace effective of the army in 1890 was 1,600 officers and 28,400 men, forming 36 battalions of infantry, 1 transport company, 1 depot company for instruction, 12 regiments of cavalry, 5 regiments of field and 5 battalions of foot artillery, and 2 battalions of pioneers. The Gendarmerie number 10,000 men, of whom 2,000 are quartered in the capital. The National Guard is to be reorganized.

The navy in 1890 consisted of 58 vessels, of which 10 are ironclad, mounting 232 guns all told. There were 5 cruisers, 17 gunboats, 2 steamers, 5 schoolships, 13 auxiliary vessels, 2 propellers, and 14 torpedo boats. The crews numbered 5,934 men, including officers. A fast protected cruiser of 4,500 tons is not yet finished.

Finances.—The budget for 1890 made the total revenue 142,989,500 milreis, of which 87,000,000 milreis were the estimated receipts from import duties, 2,590,000 milreis from port dues, 15,030,000 milreis from export duties, 13,440,000 milreis from railroads, 3,000,000 milreis from posts and telegraphs, 19,120,000 milreis from stamps, succession duties, and registration, and 2,800,000 milreis from other sources. The revised estimate made the total receipts 147,200,000 milreis. The expenditure for 1890 was estimated at 151,219,720 milreis, 9,226,528 milreis being assigned to the Interior Department, 805,707 milreis to foreign affairs, 7,816,575 milreis to justice, 11,495,000 milreis to the navy, 14,994,492 milreis to the army, 44,779,248 milreis to public

works, and 62,102,166 to the Department of Finance. In 1889 the revenue was estimated at 139,340,000, and the expenditure at 153,147,844 milreis. This does not include 20,266,965 milreis of extraordinary expenditure, toward which there was an extraordinary revenue of 7,780,000 milreis. For 1890 the extraordinary expenditure was reckoned at 25,456,830 milreis.

The expenses on account of the debt were estimated for 1890 at 47,201,503 milreis. The internal funded debt, amounting in December, 1889, to 543,555,300 milreis, consists mainly of 5-per-cent. bonds. The foreign loans amount to 270,395,556 milreis, or £30,419,500 sterling, about two thirds paying 4 per cent. and the rest 4½ per cent. interest. A sinking fund of 1 per cent. is provided, with which the bonds are to be paid off by lot if they stand above par; but if they are below par, it is to be applied to purchases in the open market.

Change of Ministry.—A difference arose between the Minister of Agriculture and the President in regard to the construction of a harbor for the State of Rio Grande do Sul. Improvements in the Rio Grande harbor and an attempt to build a railroad to Santa Catharina in the northern part of the State had proved unsuccessful; and the President, who was accused by his enemies of favoritism and connivance in jobbery, insisted in granting a concession and guarantee to projected harbor works in the roadstead at Torres, and a railroad leading thither, with the view of making that the port of the province. Dr. Glycerio disapproved, and on Jan. 5 tendered his resignation. The refusal of the Congress to vote indemnity for the acts of the Provisional Government was resented by the President, and, taking the occasion when the Constitution passed its first reading, the remaining ministers resigned their portfolios together on Jan. 20, 1891. On Jan. 22 a new Cabinet was organized as follows: Baron de Lucena, Minister of Agriculture, Commerce, and Public Works; Dr. João Barbalhao Uchoa Cavalcante, Minister of the Interior and Public Instruction; Tristeo de Alancar Araripe, Minister of Finance; Dr. Justo Leite Pereira Chermont, Minister of Foreign Affairs; Rear-Admiral Fortunato Foster Vidal, Minister of Marine; Major-General Antonio Nicolao Falcão da Frota, Minister of War; Assis Brazil, Minister of Justice. On Feb. 23 the Constitution was adopted in its amended form, and on Feb. 25 Marshal Deodoro da Fonseca was elected President by a majority of 23, Prudente de Moraes being the opposing candidate. General Peixoto was chosen Vice-president by a majority of 47 votes. The Congress then separated to begin its regular session on June 15. The Cabinet was remodeled on May 23, Americo Braziliense becoming Minister of Finance in the place of Senhor Araripe, who was transferred to the Ministry of the Interior, and Senhor Cavalcante made Minister of Posts and Telegraphs, while Alfonso Carvalho entered the Cabinet as Minister of Justice. The new Minister of Finance was unable to cope with the growing difficulties of the situation, and on July 5 he retired and was succeeded by Baron Lucena, whose former duties were assumed by Senhor Cavalcante.

Reciprocity with the United States.—A treaty to secure reciprocal trade between Brazil

and the United States was concluded at Washington on Feb. 7, 1891, by virtue of which sugar, molasses, coffee, and hides, the produce of Brazil, are exempt from duty on importation into the United States. In reciprocity for and in consideration of the exemption from duty of these articles by an act of Congress approved in October, 1890, the Government of Brazil by legal enactment authorized the admission into Brazil, free of all duty, whether national, State, or municipal, of certain articles produced or manufactured in the United States and of another list of articles with a reduction of 25 per cent. from the tariff now in force, or any future tariff. The Brazilian act went into force on April 1, 1891. The following is the schedule of articles admitted free into Brazil: Wheat, flour, corn, maize, and the manufactures thereof, including cornmeal and starch, rye, rye flour, buckwheat flour, barley, potatoes, beans, pease, hay, oats, pork (salted), including pickled pork and bacon, except hams, fish (salted, dried, and pickled), cotton-seed oil, coal (anthracite and bituminous), resin, tar, pitch, turpentine, agricultural tools and implements, machinery, including stationary and portable engines, all machinery for manufacturing and industrial purposes (except sewing machines), instruments and books for use in the arts and sciences, and railway construction material and equipment. Of these, the average imports for the last three years have been \$20,003,937 in annual value, and of this the United States have contributed only \$3,394,633, while other countries have furnished \$16,609,304. The schedule of articles that Brazil admits with a reduction of duty of 25 per cent. is as follows: Lard and the substitutes therefor, bacon, hams, cheese, canned and preserved meats, fish, fruits and vegetables, manufactures of cotton (including cotton clothing), manufactures of iron and steel not included in the foregoing free schedule, leather and the manufactures thereof (except boots and shoes), lumber and timber and the manufactures of wood (including cooperage, furniture, and all kinds of wagons, carts, and carriages), and the manufactures of rubber. Of these, the average value of the importations for three years has been \$38,631,242, of which the United States furnished only \$2,035,899, while other countries furnished \$36,595,343.

An American steamship company has been organized, with A. J. Dittenhoefer and Henry L. James, of New York, as president and vice-president, to build or buy six steamers and eight fast-sailing vessels for the purpose of establishing a mail packet and commercial line between New York and the ports of Brazil. The United States and Brazilian governments may give subsidies for regular semi-monthly mails, and the Brazilian Government has guaranteed interest on the capital raised by \$3,000,000 of bonds. The voyage between New York and Rio will be made in fourteen days.

A Dictatorship proclaimed.—Differences arose between the President and Congress, at first over financial measures passed by the Chambers and vetoed by the President and schemes recommended by the President that were voted down by Congress. A *coup d'état* leading to a dictatorship or the restoration of royalty was feared by the opponents of Fonseca, who introduced a

bill fixing the procedure for the impeachment of the President. When President da Fonseca vetoed it, the Chamber passed a motion to override the veto, whereupon the President dissolved Congress by a decree published on Nov. 3. Armed force was used to close the Chambers. Martial law was proclaimed in the Federal District. The rupture was preceded by riotous disturbances in Rio on Oct. 8, and was attended by street fighting on Nov. 4. President Deodoro da Fonseca proclaimed himself Dictator on the invitation of officers of the army, announcing that he would fix a date later for the election of representatives of the nation. The army and a part of the navy supported him in his course of action, which he declared, in a manifesto, to be due to irregular proceedings of Congress and the efforts of the promoters of a restoration of the monarchy. He convoked a new Congress charged with the revision of the Constitution, which is to meet in January, 1892. The ministers, with the exception of Baron de Lucena, who, like Gen. Deodoro, was formerly an Imperialist, all resigned their portfolios. The suspension of the Constitution caused much popular dissatisfaction in many of the States, most of all in Rio Grande do Sul, where the local Government ordered the National Guard under arms, and the authority of the Dictator was repudiated. President da Fonseca ordered troops to Rio Grande to prevent the State authorities from carrying their declaration of independence into effect. On Nov. 10, the State of Grão Pará likewise declared its independence. A decree was published making expulsion from Brazil the penalty for resisting the Dictatorship. The revolt against the Central Government in Rio Grande do Sul, which began on the night of Nov. 9, spread rapidly. The Government troops at Yugaraoon and in two other garrisons went over to the rebels, who were led by Gen. Fernandez.

The Government had about 6,000 troops, half the army, in Rio Grande do Sul. Of these, five infantry regiments and one of cavalry deserted to the insurgents as soon as the revolt was proclaimed. Large bodies of volunteers were raised, with the intention of gaining possession of the whole province before the naval and military reinforcements arrived. Of the towns, only Porto Alegre, the capital, Yugaraoon, and Santa Victoria supported the dictatorship. Gen. Fernandez advanced on the capital, capturing Santa Anna to the north of it, which offered little resistance. The revolution, though caused by the differences between the President and Congress, started on Oct. 7 in a row at an opera in Rio Janeiro between students and the police, which was followed by street fighting for two days, at the end of which the police were replaced by soldiers. Fonseca and his Cabinet assumed, for politic reasons, that the chief trouble in Rio Grande was due to the strife between the two contending parties, and would end with the triumph of the party hostile to the administration. When the Government transports were unable to land troops to engage the insurgents by reason of obstructions placed in the channel, when Porto Alegre was in their hands, when they had raised an army by the middle of November of 50,000 men, and when Gen. Ossorio, who was made commander-in-chief, issued a

manifesto in which he threatened to march on to Rio Janeiro to depose the Dictator, then Baron Lucena telegraphed to the revolutionary Junta that he would recognize any local government that the people of the province preferred, on the sole condition that peace and tranquillity should be restored. The Junta, at the head of which stood Dr. Assis Brazil, one of the chief originators of the republican movement, replied that his forces would not disarm until Fonseca should resign the presidency and the Congress be reassembled in Rio Janeiro. On Nov. 21 the President issued a proclamation appointing Feb. 29 as the date for the general election and May 8 for the assembling of the next Congress. He recommended that the Constitution should be amended to secure the independence of the judiciary and the Executive by introducing safeguards to uphold the President's veto, by enlarging the powers of the Executive and limiting those of Congress, and by reducing the number of representatives. He advised also the legal recognition of existing decorations and titles of distinction. Fonseca became alarmed when he discovered that a large part of the army could not be depended on to fight for him. The forces were rapidly augmented by recruits attracted by liberal pay. When signs of indifference and even of hostility began to be manifested among the naval commanders, the Dictator perceived that success was very doubtful. The State of Pará refused to furnish aid to the Dictator, and the municipal authorities of the capital city compelled the Government troops to deliver up their arms. In the city and the State of Rio Janeiro there was strong sympathy with the revolt. A military force was sent to Santa Catharina after the return of the unsuccessful expedition to the Rio Grande, for the purpose of entering the insurgent State by land and meeting the revolutionary army, which had set out on its northward march. Admiral Wandelkolk, ex-Minister of Marine, and other chiefs of the navy and eminent military officers, consulted on the situation, and decided to end the crisis and prevent a collision with the insurgent army, which was rapidly approaching the border of Santa Catharina, by a military *pronunciamiento* against Fonseca. On Nov. 23 the demonstration, backed by the army and the fleet, took place in Rio, and Marshal Fonseca was given 24 hours in which to abdicate. The squadron fired several shots into the city, injuring some of the churches, in sign of the earnestness of its demand. Fonseca hesitated only long enough to convince himself that the navy and three quarters of the army had declared against him. He presented his resignation to his Prime Minister and friend, Baron Lucena, and issued a manifesto announcing his retirement and stating that his motive was to avoid bloodshed. Floriano Peixoto was immediately installed by the revolutionary committee as President in his stead. The new President appointed a Cabinet in which Rodriguez Alves was made Minister of Finance; Faria, Minister of Agriculture; Pereira, Minister of Justice; and temporarily of the Interior and of Education; Mello, Minister of Marine; Oliveira, Minister of War; and Pulitta, Minister of Foreign Affairs. As soon as Fonseca's abdication was known, the insurgent army

in Rio Grande do Sul began to disband. The state of siege proclaimed by Fonseca was raised. On Nov. 25 Gen. Peixoto issued a call for the reassembling on Dec. 18 of the Congress dissolved by Fonseca. The same Congress reassembled, and all the States were represented. Though the secession movement in Rio Grande do Sul did not entirely subside at once, Gen. Floriano Peixoto appeased this thriving and populous state, with 650,000 inhabitants, of whom 200,000 are Germans, by choosing the majority of the ministers from among its Deputies. The Ministry of Finance was given to Senhor de Paula Rodriguez Alves, who had a high reputation for ability. The crisis had been caused principally by the financial proceedings of Fonseca and his Cabinet, who found, on assuming power, a foreign debt of \$154,000,000, an internal debt still larger, and \$114,000,000 of railroad bonds in which interest was guaranteed, while only one line, the São Paulo, capitalized at \$9,000,000, earned the amount of the guarantee. The Government launched out in new undertakings to please politicians and their localities, and the financial stress became great. The state of the treasury grew alarming when it was discovered that the expected deficit of \$14,000,000 would be surpassed by \$5,000,000. Foreign trade and productive activity went on during the crisis. The President's dispositions reduced the deficit for 1890 to \$8,000,000 in gold, and the country soon settled down under the new Government.

BULGARIA, a principality in southeastern Europe, tributary to Turkey. The Constitution of 1879 vests the legislative authority in a single Chamber, called the *Sobranje*, the members of which are elected by universal suffrage for three years, in the proportion of 1 to every 10,000 of population. Eastern Roumelia, which was created an autonomous province of Turkey by the Treaty of Berlin, was united to Bulgaria by the revolution of September, 1885, and the Prince of Bulgaria was commissioned as Governor-General by the Sultan in April, 1886. The reigning Prince is Ferdinand, born Feb. 26, 1861, the youngest son of the late Prince August, Duke of Saxe-Coburg-Gotha, and of Princess Clementine, daughter of Louis Philippe, King of the French. He was elected by the great *Sobranje* on July 7, 1887, to succeed Prince Alexander of Battenberg, who abdicated on Sept. 7, 1886; but his election has never received the formal assent of the Porte and the signatory powers, as required by the Treaty of Berlin.

Area and Population.—The area of Bulgaria proper is 24,360, and of Eastern Roumelia, or South Bulgaria, 13,500 square miles; total area, 37,860 square miles. The total population was found by a census taken Jan. 1, 1888, to be 3,154,375 persons, of whom 960,441 inhabited South Bulgaria. The population was divided as to sex into 1,605,389 males and 1,548,986 females. The race statistics give 2,326,250 Bulgars, 607,319 Turks, 58,338 Greeks, 50,291 gypsies, 23,546 Jews, 2,245 Germans, 2,142 Serbs, 2,557 other Slavs, 1,069 Russians, 544 French, and 80,074 of other nationalities.

Finance.—The budget for 1891 estimates the revenue at 80,470,000 lei or francs, and the expenditure at 79,299,233 francs. For the army, 20,617,435 francs are required; for the public

debt, 13,078,618 francs; for financial administration, 13,820,732 francs; for the Ministry of the Interior, 8,335,430 francs; for public works, 7,722,243 francs; for public instruction, 5,140,985 francs. Of the revenue, 39,952,000 francs are raised by direct taxation, and 15,893,500 francs by custom-house and internal duties.

The debt to the Russian Government on account of the occupation, of which 15,893,500 francs remain to be paid, is to be extinguished in 1896. A loan of 50,000,000 francs was contracted in 1887, and another of 30,000,000 francs. The Government has assumed the annual tribute of £118,000 Turkish owed to the Sultan by Eastern Roumelia, and arrears of £21,000 Turkish. The powers have not yet acted on the clause of the Berlin Treaty requiring them to assess the tribute Bulgaria shall pay.

The Army.—The army, service in which is obligatory both in Bulgaria and Eastern Roumelia, has a peace strength of 1,604 officers and 34,203 soldiers, and a war strength of 2,304 officers and 122,703 men. It is organized in 3 divisions, of 2 brigades each, composed of 24 regiments of infantry, of 2 battalions and 1 depot battalion; 4 cavalry regiments of 4 squadrons, besides the troop of the guards; 6 regiments of field artillery, each having 4 batteries, of 4 pieces in peace and 8 in war, and a mountain battery with 2 guns; 2 depot batteries and 1 battery of siege artillery; 1 regiment of engineers, of 2 battalions; and 1 disciplinary company.

The fleet, consisting of 1 yacht, 3 steamers, 7 steam sloops, and 2 torpedo boats, is manned by 12 officers and 334 men.

Commerce and Production.—The people are employed mostly in agriculture, and the main article of export is wheat. In 1889 the value of the grain exports was 45,841,000 lei or francs. Live animals were exported of the value of 6,000,000 francs. Other exports are wool, tallow, butter, cheese, hides, flax, and timber. The value of the imports in 1889 was 72,869,245 francs, of which 22,492,177 francs came from Austria-Hungary, 21,193,374 francs from Great Britain, 9,778,456 francs from Turkey, 4,532,297 francs from Russia, and the rest from Germany, France, Roumania, and other countries; the direct imports from the United States being 59,554 francs, while there were no exports to this country. The chief imports are cotton and other textile manufactures, iron and other metals, and coal. The total value of the exports in 1889 was 80,581,076 francs, of which 30,555,910 francs were invoiced to Turkey, 18,290,317 francs to France, 12,595,444 francs to England, 3,558,284 francs to Austria, between 1,000,000 and 2,000,000 francs each to Italy, Roumania, Germany, Belgium, and Greece, and only 84,669 francs to Russia. With Serbia the commercial intercourse amounted to 962,547 francs of imports and 358,184 of exports.

Political Complications.—The election in August, 1890, of a large majority to sustain in the *Sobranje* the national or anti-Russian policy of the dictatorial Prime Minister, Stambuloff, was an index of the feeling of the country. Among the uneducated farming class the sentiments of gratitude toward Russia and of veneration for the orthodox Czar have little force, and whatever pro-Russian feeling exists is born of fear of Russian vengeance. The masses of

the people take little interest in politics, and only ask their Government to avoid war, to make the burden of taxation light, and to exercise its police powers as little as possible. The political restlessness in Bulgaria is confined to the numerous class of professional politicians who depend on public office for their livelihood, and who are willing to become the tools of Pan Slavist intrigues, and to foment agitation against the men in power in the hope of succeeding them. All the leaders have been Nationalists when in office. Zankoff, the originator of the policy of Bulgaria for the Bulgarians, allied himself with Russian conspirators and planned the abduction of Prince Alexander in order to oust Karaveloff. The latter, to avoid an open rupture with Russia, schemed to get rid of Alexander while keeping the reins of power in his own hand. Stambuloff then took the lead in the Nationalist cause, and successfully carried through a counter-revolution. The Zankovists, the revolutionary Russophil party, were proscribed, and the active agents in the kidnapping and other military conspiracies became pensioners on the Russian Slav Committee, ready to engage in fresh insurrectionary plots. Karaveloff and his followers were tolerated, but suspected, by Stambuloff and the party in power. From Stambuloff's party branched off a new opposition party, called the Radoslavists, from their leader, Radoslavof, who are in accord with the Stambulovists in wishing to maintain Bulgarian independence, but condemn the tyrannical and unconstitutional methods employed by the Prime Minister to crush his adversaries. After the general election, in which the Zankovists and other opposition parties were prevented by official interference from manifesting their actual strength, the country enjoyed many months of tranquillity. Shortly before the beginning of 1891, a young but eminent financier, Belcheff, was appointed to the vacant Ministry of Finance. The Russian Government having complained, through the German consul-general, of the hospitality given in Bulgaria to Russian refugees and Nihilists, the Bulgarian Government expelled a number of persons, among whom were some that were known to be Russian spies, who, to conceal their purposes, had pretended to be Nihilists. In the case of two suspicious individuals who were expelled, the St. Petersburg Cabinet raised a protest. Threats of vengeance against Stambuloff for the execution of Major Panitza, and incipient plots against the life of Prince Ferdinand were concealed from the public. About a month before the expiration of the Prince's commission as Governor of Eastern Roumelia, the appointment of his predecessor, to whose rights he was tacitly allowed to succeed, having been for the constitutional period of five years, dating from April 6, 1886, rumors were heard of an intended insurrection on the borders of Servia and Roumania. Major Bendereff and Capt. Gruelf, the kidnappers of Prince Alexander, were seen in Bucharest and Servian towns in the company of political fugitives and adventurers. On March 27 three political assassins fired at the Prime Minister and his friend, Minister Belcheff, as they were walking together on the street, and the latter was killed, while his chief, who was

the intended victim, escaped. Among the hundreds of persons who were arrested in the next few days were Karaveloff and other political opponents of Stambuloff. Many were released, but several of the leaders of the Russophil party were detained in custody. Bulgarian refugees and hired Montenegrins and Macedonians had been armed with revolvers and Berdan rifles, and were ready, on the assassination of the Prime Minister, to cross the Servian frontier and begin a guerilla war. Two secret deposits of arms and many documents, pointing to a widely ramified conspiracy, were discovered by the police in Sofia. The murdered minister was succeeded by Natchevich, a distinguished financier. When the time came for the Porte to appoint a governor of Eastern Roumelia, it let the date pass without making a sign, thereby tacitly accepting the union of the two Bulgarias and the permanent rule of the Prince over the autonomous province. The request of the Turkish agent in Sofia for an audience with Prince Ferdinand, and the reception of Dr. Vulkovich and M. Natchevich by the Sultan, were clear manifestations of the friendly disposition of the Turkish Government and a recognition of the loyal attitude of the Bulgarian authorities in regard to Macedonian disturbances. In August, the Turkish authorities in Macedonia were instructed to allow the Bulgarians in Macedonia to exercise freely their religious ceremonies and manage the tuition in their schools without reference to the Greek patriarchate. The refusal of the Servian Government to deliver up Rizof, a Bulgarian journalist suspected of having instigated the Belcheff murder, who was afterward allowed free passage through Roumania into Russia, and the continued presence of dangerous characters on the frontier, caused the Bulgarian Government to push on the fortifications at Slivnitza and the Dragoman Pass, to call out reserve regiments, and to concentrate troops on the frontier. The Servians responded by massing troops on their side, and prepared to manoeuvre 65,000 men along the frontier in the autumn. This caused the Turkish Government to urge Servia to withdraw her troops, and in consequence of this invitation both the Servian and the Bulgarian governments desisted from the threatening demonstrations. When the new Turkish Cabinet, by objecting to the emission of silver coins bearing Prince Ferdinand's effigy, and to the construction of the Uskub-Kustendil strategic railroad, showed Russophil tendencies, the British, Austrian, and Italian governments instructed their diplomatic agents at Sofia to be less reserved in their intercourse with Prince Ferdinand. Dissensions arose between the Prime Minister and the Minister of Justice, owing to illegal methods pursued by officials in investigating the Belcheff murder and the interference of M. Stambuloff with judicial proceedings against one of his partisans. On Oct. 2, M. Tontcheff resigned, and M. Grekoff, the Minister of Foreign Affairs, added the portfolio of Justice to his own. The latter minister, on going to Constantinople to present anew a request for the formal recognition of Prince Ferdinand, instead of receiving from the Sultan the usual temporizing reply, met with a decided rebuff.

C

CALIFORNIA, a Pacific coast State, admitted to the Union Sept. 9, 1850; area, 158,360 square miles. The population, according to each decennial census since admission, was 92,597 in 1850; 379,994 in 1860; 560,247 in 1870; 864,694 in 1880; and 1,208,130 in 1890. Capital, Sacramento.

Government.—The following were the State officers during the year: Governor, H. H. Markham, Republican; Lieutenant-Governor, J. B. Reddick; Secretary of State, Edward G. Waite; Treasurer, J. R. McDonald; Comptroller, Edwin P. Colgan; Attorney-General, W. H. Hart; Surveyor-General, Theodore Reichert; Superintendent of Public Instruction, James W. Anderson; Railroad Commissioners, William Beckman, J. M. Litchfield, and James W. Rea; Chief Justice of the Supreme Court, W. H. Beatty; Asso-

ciate Justices, J. R. Sharpstein, T. B. McFarland, A. Van R. Paterson, C. H. Garoutte, Ralph C. Harrison, J. J. De Haven.

Population by Races.—The table below presents the population of the State by races in 1880 and 1890.

Finances.—The State Treasurer reported a balance in the treasury on July 1, 1888, of \$1,546,434.25; the total receipts for the year ensuing were \$7,554,526.68, and the total expenditures \$7,035,189.50, leaving a balance on July 1, 1889, of \$2,065,771.43. For the year next following the total receipts were \$9,999,663.62, and the total expenditures \$8,500,175.69, leaving a balance of \$3,565,259.36 on July 1, 1890. These figures include all the various funds held by the State Treasurer. The separate receipts and expenditures of the more important of these funds were

COUNTIES.	WHITE.		COLORED.		CHINESE.		JAPANESE.		INDIANS.	
	1890.	1880.	1890.	1880.	1890.	1880.	1890.	1880.	1890.	1880.
Alameda.....	89,615	57,785	612	686	3,231	4,386	179	16	27	103
Alpine.....	440	521	8	1	5	17	.....	.....	219	.....
Amador.....	9,907	9,924	26	73	317	1,115	.....	.....	70	272
Butte.....	15,888	14,270	227	136	1,504	3,798	3	.....	317	522
Calaveras.....	8,374	7,832	85	56	838	1,037	3	.....	82	169
Colusa.....	13,233	11,693	140	97	946	970	5	.....	296	353
Contra Costa.....	12,978	11,712	57	33	463	732	5	1	4	47
Del Norte.....	2,203	1,731	8	5	7	434	1	.....	375	411
El Dorado.....	8,363	8,569	192	132	535	1,484	2	5	140	193
Fresno.....	23,457	7,891	436	40	2,743	753	9	.....	381	734
Humboldt.....	21,900	13,313	55	23	19	241	.....	.....	1,495	1,035
Inyo.....	2,581	2,197	21	4	56	90	.....	.....	856	637
Kern.....	8,219	4,563	113	4	1,090	702	5	.....	391	332
Lake.....	6,297	5,339	33	14	200	469	.....	.....	566	774
Lassen.....	8,855	2,963	3	2	39	50	.....	.....	342	330
Los Angeles.....	94,972	31,707	1,574	138	4,406	1,169	35	1	167	316
Marin.....	11,872	9,791	197	37	387	1,327	23	7	38	162
Mariposa.....	3,373	3,395	69	63	133	697	.....	.....	162	154
Mendocino.....	16,557	11,135	4	355	346	.....	.....	.....	662	1,265
Merced.....	7,301	5,015	54	59	696	575	.....	.....	34	7
Modoc.....	4,464	3,955	16	23	23	17	.....	.....	433	404
Mono.....	1,476	7,082	3	19	143	353	.....	.....	375	35
Monterey.....	16,821	10,643	105	60	1,638	372	1	.....	37	222
Napa.....	15,533	12,160	31	104	732	905	7	2	53	64
Nevada.....	16,059	17,567	103	150	1,040	3,003	4	2	153	101
Orange.....	13,400	.....	21	.....	163	.....	.....	.....	7	.....
Placer.....	13,635	11,832	35	69	1,349	2,190	6	.....	76	91
Plumas.....	4,173	4,761	6	9	356	371	.....	1	393	533
Sacramento.....	35,567	23,923	463	560	4,217	4,392	43	1	39	14
San Benito.....	6,223	5,255	54	6	35	242	.....	.....	50	31
San Bernardino.....	24,103	6,933	293	17	633	123	2	.....	406	653
San Diego.....	33,126	6,674	369	13	399	229	13	.....	530	1,702
San Francisco.....	270,626	210,496	1,633	1,623	25,870	21,745	576	45	32	45
San Joaquin.....	26,635	21,990	359	323	1,619	1,997	4	.....	12	34
San Luis Obispo.....	15,175	8,733	433	23	373	133	2	.....	84	153
San Mateo.....	9,562	8,031	52	34	455	596	11	.....	7	3
Santa Barbara.....	15,070	9,135	31	63	537	227	5	.....	31	33
Santa Clara.....	44,261	32,110	1,005	161	2,636	2,695	25	.....	13	73
Santa Cruz.....	13,416	12,035	53	63	767	523	16	.....	13	131
Shasta.....	10,730	7,066	227	54	330	1,334	1	1	775	1,037
Sierra.....	4,555	5,337	13	22	474	1,252	.....	.....	9	12
Siskiyou.....	10,169	6,461	127	33	1,142	1,563	.....	.....	725	493
Solano.....	19,322	17,337	100	72	1,436	993	22	2	16	21
Sonoma.....	31,133	24,623	42	60	1,173	904	74	.....	294	339
Stanislaus.....	9,554	8,136	59	20	415	513	.....	.....	12	27
Sutter.....	5,119	4,345	33	35	317	266	.....	.....	.....	13
Tehama.....	6,656	3,213	262	142	339	774	.....	.....	109	167
Trinity.....	2,921	2,730	23	7	555	1,361	.....	.....	210	261
Tulare.....	23,232	10,767	200	30	951	324	.....	2	191	113
Tuolumne.....	5,376	6,612	30	34	241	365	.....	.....	215	347
Ventura.....	9,404	4,349	115	15	437	129	.....	.....	115	30
Yolo.....	11,974	11,015	113	102	547	603	3	.....	42	47
Yuba.....	3,413	3,324	220	247	930	2,146	1	.....	33	67
The State.....	1,111,536	767,181	11,437	6,013	71,631	75,132	1,099	36	12,355	16,277

as follow: General fund, balance on July 1, 1888, \$499,812.80; receipts for year ensuing, \$3,065,183.13; expenditures, \$3,060,515.62; balance on July 1, 1889, \$504,482.31; receipts for year ending July 1, 1890, \$5,081,484.61; expenditures, \$3,755,330.07; balance on July 1, 1890, \$1,330,636.85. School fund, balance on July 1, 1888, \$277,941.95; receipts for year ensuing, \$2,582,013.51; expenditures, \$2,501,108.39; balance on July 1, 1889, \$358,847.07; receipts for year ending July 1, 1890, \$2,719,743.71; expenditures, \$2,658,480.14; balance on July 1, 1890, \$420,100.64. Interest and sinking fund, balance on July 1, 1888, \$243,505.49; receipts for year ensuing, \$204,738.15; expenditures, \$212,680; balance on July 1, 1889, \$235,563.64; receipts for year ending July 1, 1890, \$205,464.03; expenditures, \$246,000.83; balance on July 1, 1890, \$194,126.84. State School Land fund, balance on July 1, 1888, \$115,970.52; receipts for year ensuing, \$275,976.07; expenditures, \$139,609.99; balance on July 1, 1889, \$252,156.60; receipts for year ending July 1, 1890, \$255,602.68; expenditures, \$459,619.11; balance on July 1, 1890, \$48,140.17.

The bonded State debt amounts to \$2,642,000, all except \$5,000 of which is represented by the funded-debt bonds of 1873. These bonds are held as follow: By individuals, \$278,000; by the State School fund, \$1,541,500; by the University fund, \$817,500.

The high rate of State taxation during the past few years has provoked frequent complaints, and the subject of taxation became one of the most important local topics discussed in the canvass of 1890. Both of the leading parties promised to keep the rate below 50 cents on each \$100 of valuation. As a result, the rate fixed by the State Board of Equalization this year was 23.4 cents for the general fund and 17.6 cents for the School fund, a total of 41 cents, as against a total of 58 cents in 1890 and 72.2 cents in 1889.

Legislative Session.—The twenty-ninth session of the Legislature began on Jan. 5, and ended on March 25. On Jan. 13, United States Senator Leland Stanford, who was the unanimous choice of the Republican caucus, was re-elected for the full senatorial term by the following vote: Senate, Stanford 27, Stephen M. White, the Democratic nominee, 12; Assembly, Stanford 59, White 18, Benjamin Morgan 1. On Feb. 28, Senator Stanford's colleague, United States Senator George Hearst, died in Washington, and numerous Republican candidates for the office appeared. Without an attempt at settlement in the Republican caucus, the contest between them was carried directly into the Legislature. On the first ballot in each House, on March 10, the following vote was cast: Senate—M. M. Estee 12, M. H. De Young 4, Charles N. Felton 7, George G. Blanchard 3, William Johnston 2, D. A. Ostrom (Democrat) 10, scattering 2, Assembly—Estee 13, De Young 18, Felton 8, Blanchard 9, Johnston 4, Ostrom 15, scattering 11. Eight ballots were taken, Estee leading in all except the last. The eighth ballot, on March 19, resulted in the election of Charles N. Felton, by the following vote: Felton 73, Estee 15, Stephen M. White (Democrat) 28, scattering 2.

An Australian or secret-ballot law was enacted

at this session. It provides that all ballots cast in elections for public officers shall be printed and distributed at county expense, except that ballots for municipal officers shall be printed and distributed at the expense of the city or town. Candidates whose names are entitled to appear on the official ballots must be nominated either by the convention of a political party that polled at the last preceding election 3 per cent. at least of the entire vote cast in the State or other political division for which the nomination is made, or by nomination papers signed by electors equal in number to at least 5 per cent. of the entire vote cast in the last preceding election in the State or other political division for which the nomination is made. The duty of preparing the ballots for city and town elections is imposed on the town or city clerk, and for all other elections on the county clerk. Tinted blank paper for the ballots shall be furnished to these officers by the Secretary of the State on payment of the cost. Such paper shall be water marked with a design to be furnished by the Secretary of State, so that it shall be plainly discernible on the outside of the ballot when folded. Such design shall be kept secret until the election, and shall be changed for each general election. The paper for ballots for municipal officers shall be of a different tint from the paper used for other ballots. The names of all candidates for city or town officers shall be placed on the municipal ballots and the names of all other candidates on the general ballots. They shall be arranged under the designation of the office in alphabetical order according to surname, except that the names of candidates for presidential and vice-presidential electors shall be arranged in groups as presented in the several certificates of nomination, and the elector may vote for the whole of such group by making a mark after such group. There shall be added to the names of all candidates their party or political designation. Blank spaces shall be left in which the elector may write the names of other candidates. At the head of each ballot shall be printed the names of all political parties that have filed certificates of nomination, and the elector, by placing a mark opposite the party name shall be considered to have voted for all the party candidates, but a ballot so marked shall not be counted if marked in any other place, except to indicate a vote on any question submitted on the ballot.

At each polling place a sufficient number of booths or compartments shall be provided in which voters may conveniently mark their ballots screened from observation. Each elector shall receive but one general ticket and but one municipal ticket from the ballot clerk, who shall note the number on the ticket and write it in his register opposite the name of the elector. The marking shall be done only with a stamp furnished for that purpose. On election days employes shall be allowed two hours without loss of pay for the purpose of voting. The act took effect on July 1, 1891.

An act to prevent Chinese immigration prohibits any Chinese person, except certain officials of the Chinese Government and their retinue, from coming to or within, or landing at or remaining in, any port or place within the State, whether for the purpose of transit only or oth-

erwise. The master or agent of any vessel bringing such prohibited persons into the State is subjected to a heavy fine. Every Chinese person resident in the State at the time of the passage of this act is required, within one year thereafter, to apply to the State Bureau of Labor Statistics for a certificate of residence, which shall state the name of the person and various facts regarding his personal appearance, place of residence, etc., and upon it shall be printed or pasted a well-taken photograph of the applicant, including all facial marks or features that will facilitate identification. Such certificate shall be recorded with the county clerk within the year, and any Chinese person within the State at the time of the passage of the act who shall not comply with these provisions shall be adjudged by the court to be unlawfully within the State and shall be subject to the penalties hereinafter provided. Every agent of any transportation company or line or vessel, before selling a ticket or passage to any Chinese person, shall require him to produce his certificate of residence, and shall insert the number of said certificate in the ticket. If such certificate is not produced the agent is required to cause the arrest of such person, and to file a complaint against him for being unlawfully in the State. No Chinese person shall be permitted to enter the State by land or water without first producing the certificate in this act required of Chinese persons resident in the State. The burden of establishing citizenship shall rest upon the defendant. Any Chinese person adjudged guilty of being unlawfully within the State shall be punished by being deported from the State to his or her own country, or by a fine of not less than \$500 nor more than \$1,000 and deportation from the State to his or her own country, or by imprisonment in the State Prison for a term not less than one year nor more than five years, and on termination of said imprisonment by deportation to his or her own country. Any person who shall knowingly bring into or cause to be brought into the State, by land or otherwise, or who shall aid or abet the same, or aid or abet the landing in the State from any vessel or otherwise of any Chinese person not lawfully entitled to enter the State, shall be deemed guilty of a felony, and shall, on conviction thereof, be fined a sum not exceeding \$1,000 and imprisoned in the State Prison for a term not exceeding one year, and, if a Chinese person, shall be sentenced to deportation as in other cases.

An act in the interest of working men requires corporations to pay their mechanics and laborers weekly or monthly on regular days, and in default of such payment the latter shall have a lien for their wages on all the property of the corporation prior to all other liens, except duly recorded mortgages and deeds of trust.

Provision was made for submitting to the people at the next general election a proposed amendment to the State Constitution limiting the pay of members of the Legislature to one hundred days, and providing that no bill shall be introduced after sixty days of the session have expired, except by consent of two thirds of the members. It was also enacted that at the same election the sense of the people should be taken upon the question whether an educational

qualification for suffrage ought to be required, and upon the question whether United States Senators ought to be elected by a direct vote of the people.

To provide for representation of the State at the World's Fair in 1893 a board of seven commissioners were created, with authority to provide buildings and superintend the exhibit at the fair. The sum of \$300,000 was placed at their disposal for this purpose.

An act was passed, to be submitted to the people at the next general election, authorizing the State Treasurer to issue and sell not over \$600,000 in bonds of the State, bearing 4 per cent. interest and payable in nineteen years, the proceeds of such sale to be used in building a general railroad, passenger, and ferry depot at or near the foot of Market Street in San Francisco. To meet the interest on these bonds and to provide a sinking fund for their payment at maturity, the State Harbor Commissioners are required to raise a sufficient sum by increasing the fees for dockage, wharfage, tolls, rents, and cramage payable to them, and to pay over such sum to the State.

Another act, to be submitted to the people, authorizes a board of loan commissioners to refund the State debt into 4-per-cent. bonds, payable in twenty years, the amount of such refunding issue to be not over \$2,528,500.

The State was redistricted for members of the Legislature and for members of Congress. Seven congressional districts were formed, of which the city of San Francisco comprises nearly two.

Congress was memorialized to enact a law whereby farmers may borrow money of the Government up to 60 per cent. of the value of their farms, paying 2 per cent. interest and giving the Government a mortgage thereon as security.

Other acts of the session were as follow:

Providing for the acquisition of the Sutter's Fort property by a board of trustees to be appointed by the Governor, and appropriating \$20,000 for preserving, protecting, and improving the same.

Authorizing the appointment of women as notaries public.

To establish a State Board of Arbitration for the settlement of differences between employers and employés.

Providing that the Superintendent of State Printing shall hereafter be elected by the people.

To punish persons selling or furnishing tobacco in any form to minors under sixteen years without the written consent of parent or guardian.

Creating a State board of pharmacy.

To punish persons selling or giving intoxicating drink to minors under eighteen years, and to punish proprietors or managers of places where liquor is sold who permit such minors to visit such places for purposes of gaming.

Creating the county of Glenn out of the northern portion of Colusa County, provided the people of the proposed new county shall vote for such separation at an election to be held in May, 1891.

Providing a new law for the formation of agricultural districts and of agricultural associations therein.

Providing for the incorporation of mutual building and loan associations.

Appropriating \$5,000 for the purpose of sending an expert to Australia, New Zealand, and adjacent countries to collect and import into the State parasites and predacious insects.

Making it a misdemeanor to advertise to obtain a divorce.

To punish the crime of train wrecking with death or imprisonment for life.

Appropriating \$5,000 for each of the years 1891 and 1892, to be expended in the encouragement of ramie culture, both by the purchase of ramie roots for free distribution to farmers and in the payment of a bounty for merchantable ramie fiber grown in the State.

Giving to honorably discharged Union soldiers and sailors a preference in employment in the public service and upon public works.

To provide for the establishment of a law library in each county.

Assenting to the act of Congress, approved Aug. 30, 1890, in aid of agricultural colleges in the various States.

Appropriating \$121,400 for improvements at the Reform School at Whittier.

Appropriating \$125,000 for additional buildings at the Home for Feeble-minded Children at Glenn Ellen, Sonoma County.

Appropriating \$25,000 for completing the building for the State Normal School at Chico.

Appropriating \$65,000 for additions and repairs at the Folsom State Prison.

Appropriating \$55,000 for improvements at the Southern California Insane Hospital.

Appropriating \$37,000 for additional buildings at the normal school at San José.

Education.—The following public-school statistics for the years ending June 30, 1889, and June 30, 1890, are contained in the last report of the Superintendent of Public Instruction:

ITEMS.	1889.	1890.
Children between 5 and 17 years..	275,302	280,582
Number attending public school..	195,229	198,960
Number attending private school..	21,044	21,460
Number not attending any school.	59,029	60,462
Children of all ages enrolled in public schools	215,905	221,756
Average daily attendance	143,733	146,589
Male teachers	1,151	1,162
Female teachers	4,104	4,272
Total value of school property....	\$12,081,278	\$12,746,308

The securities held in trust by the State Treasurer for the School fund amounted on June 30, 1890, to \$3,268,350, of which the sum of \$1,541,500 was in State bonds and \$1,726,850 in county bonds. The Superintendent reports that the present compulsory school law can not be enforced effectually without further legislation.

Charities.—At the Napa Insane Asylum there were 1,378 patients on Nov. 15, 1890, or over 300 beyond the proper capacity of the institution. At the Stockton Insane Asylum the number of patients at the close of the fiscal year 1890 was 1,588. To relieve the crowded condition of these institutions the Legislature of 1889 provided for the establishment of two new asylums at San Bernardino and at Ukiah, Mendocino County. The corner-stone of the asylum at Ukiah was laid on Dec. 9, 1890, of that at San Bernardino one week later, and the work of construction has continued through this year. In addition, the Insane Asylum at Agnews, originally intended exclusively for incurable patients, has been opened to all classes of the insane, and considerable numbers have been transferred to it from the Napa and Stockton asylums.

•**Prisons.**—The number of prisoners at the San Quentin prison on June 30, 1889, was 1,373, and at the Folsom prison 549. On June 30, 1890, the number at both prisons had consider-

ably increased. At the San Quentin prison, since 1889 the labor of convicts has been devoted solely to the manufacture of jute goods. The jute bags manufactured are sold at a low figure, and the farmers, who use them in sacking their crops, have been relieved from the high prices heretofore exacted by the combination of individual dealers in imported bagging.

Coal.—Although coal deposits have been discovered in many of the counties of the State west of the Sierras, no mining operations on a commercial scale have been prosecuted, except in Amador and Contra Costa counties. Coal was discovered in the Mount Diablo district in 1852, but productive mining was not prosecuted until after the year 1860. This district now furnishes the major portion of the product of the State. The coals of California so far as at present known are all lignitic, generally inferior to the coals of Washington and Oregon, and can not compete with the better coals supplied by sea from British Columbia and Australia. The total product of coal in California during the calendar year 1889 was 121,820 short tons, valued at \$288,232, showing an average price of \$2.31 per ton at the mines. The average number of persons employed during the year was 283, and the total wages paid \$169,649.

Lumber.—The output of mills in California during 1890 was as follows: Humboldt and Del Norte counties, 180,744,142 feet; Mendocino and Sonoma, 165,775,261; Santa Cruz, Santa Clara, San Mateo, 96,850,000; Sierra, Yuba, El Dorado, Placer, 91,500,000; Nevada, 86,500,000; Colusa, Tehama, Butte, Lake, 73,500,000; Trinity, Shasta, Siskiyou, 68,500,000; Inyo, Tulare, Fresno, Mariposa, 31,575,000; Amador, Tuolumne, Calaveras, Mono, 27,222,027; San Diego, San Bernardino, Kern, 27,000,000; Plumas, Modoc, Lassen, 15,750,000. Total, 864,916,430 feet.

Industrial.—For 1890 the area of the State devoted to wheat raising was only about 3,000,000 acres, or 900,000 acres less than in 1889. The crop produced was about 1,000,000 tons, or 400,000 tons less than in 1889. The heavy rains of the winter of 1889-'90 so flooded the low lands that the crop was almost entirely grown on the high lands. Fully 70 per cent. of it was raised in the southern counties. The wool product for 1890 is estimated at 36,000,000 pounds, against 34,008,370 pounds for 1889. The vintage of 1890 is estimated at 17,500,000 gallons, distributed among the counties as follows: Napa, 4,500,000; Sonoma, 3,000,000; Alameda, 1,750,000; Santa Clara and Santa Cruz, 3,000,000; Fresno, 1,500,000; Los Angeles and other southern counties, 1,500,000; Sacramento and northern counties, 1,250,000; all other districts, 1,000,000. In addition, about 1,000,000 gallons of brandy were made, consuming about 5,000,000 gallons of wine. The estimate for the raisin product of 1890 is 1,400,000 twenty-pound boxes.

CANADA, DOMINION OF. See DOMINION OF CANADA.

CAPE COLONY AND SOUTH AFRICA. The Cape of Good Hope is a British colony in South Africa possessing self-government. The Governor is Sir Henry Brougham Loch, who was transferred from Victoria in 1889. The Prime Minister in the beginning of 1891 was Cecil Rhodes.

Area and Population.—The area of Cape Colony, with the Transkei and Walfisch Bay, is 233,430 square miles. By the incorporation in the territory of native territories, the disproportion between the colored and the white population has been increasing, and it is predicted that in ten years the natives will outnumber the whites ten to one. In 1865 the native population was one and a half times larger than the white, and in 1891 the proportion was three to one. In the old colony the whites have increased 42·32 per cent. since the census of 1875, and the aboriginal natives only 18·35 per cent. The two classes there are nearly equal in number, the preliminary returns of the census of 1891 giving: White population, 337,000; aboriginal natives, 340,405; other colored people, 277,879; total, 955,284. The population of Griqualand West in 1891 was 83,115, of whom 29,469 were whites and 53,646 colored. In that district also the proportion of whites has increased, being 35·46 per cent., as compared with 27·33 per cent. in the census of 1877. In the native territories annexed since 1875 there were 262,705 inhabitants, of whom only 2,561 were whites. In 1891 there were 10,343 whites in a total population of 487,340. The grand total for the whole colony is 1,525,739, as compared with 1,082,966 at the last preceding enumerations. The average density has increased from 2·52 to 6·89 persons to the square mile. There are 99·03 females to 100 males, a larger proportion than formerly, owing to the annexation of native territories.

Finance.—The colonial revenue in 1889 amounted to £4,338,114, of which £1,595,458 were derived from taxation, £1,885,492 from railroads and other services, £299,833 from public lands, £55,330 from fines and other sources, and £502,000 were raised by loans. The total expenditure was £3,524,858, of which £1,049,295 represented the service of the public debt, £839,794 were for the railroad service, £142,633 for defense, £194,893 for police, £117,931 for the civil establishment, and £110,506 for extraordinary expenditure. The revenue for 1890 was £4,430,050, and for 1891 it was £4,147,736, a decrease of £282,314.

The debt of the colony in the beginning of 1890 was £21,120,784.

Production and Commerce.—In 1890 Cape Colony and its dependencies produced 1,983,108 bushels of wheat, 3,107,571 of Indian corn, 4,484,665 gallons of wine, 1,115,306 of brandy, and 4,090,376 pounds of tobacco. There were 13,202,779 sheep, 4,767,921 goats, 313,747 horses, and 1,524,213 horned cattle in the colony in 1890. The total value of imports in 1889 was £10,841,454. The imports of merchandise were £7,942,506, and the exports of colonial produce £9,405,955 in value. The principal exports and their values were as follow: Diamonds, £4,325,137; wool, £2,251,375; copper ore, £696,918; hides and skins, £430,025; ostrich plumes, £365,884; Angora goat hair, £351,544; wine, £23,120; grain, £10,043. The wine and brandy exports fell off from £529,000 gallons in 1889-'90 to 351,000 in 1890-'91. Exports of wool and agricultural produce have also declined since 1889.

The number of vessels entered in 1889 was 835, of 1,401,909 tons. Of these, 588, of 1,196,420 tons, were British. The number cleared was

818, of 1,381,268 tons. The coasting tonnage entered was 2,394,946; cleared, 2,390,077.

Communications.—The Government railroads in the beginning of 1890 had a total length of 1,608 miles. All except 63 miles have been built since 1873. The capital expenditure has been £14,318,502, or £8,905 per mile. There were 3,259,590 passengers and 541,671 tons of goods conveyed in 1889, and during that year the receipts were £1,759,832 and the expenses £937,703.

The number of letters posted in 1889 was 13,597,243; of newspapers, 6,879,457.

The telegraph lines, all of which were erected by the Government, had a total length in 1889 of 4,510 miles. The messages sent in that year numbered 1,375,929. The receipts were £94,929; expenses, £67,232.

Politics.—The most important act of legislation in 1891 was the creation of banks of issue on the model of the national banks of the United States. Their notes are protected by a deposit of Government securities, and will be redeemed in gold by the treasury in case the banks fail to pay them. Provision is made for an official investigation of any bank on application. Mr. Hofmeyr, leader of the Dutch party, who dictates the policy followed by the Premier, has proposed a measure that is intended to curtail the voting power of the natives, not by taking away the franchise from any who now possess it, but by giving a double vote to persons owning a certain amount of real property. This suggestion is approved by Mr. Rhodes, although the political predominance of the Dutch race would be increased, since a large proportion of English mechanics, miners, and traders would not be qualified to exercise the additional vote. Mr. Rhodes looks forward to a united and harmonious South African nation stretching up to the Zambesi, in which there will be no jealousy or divergence of interests between citizens of British and those of Afrikaner descent, in which Cape Colony will maintain the primacy and lead, and which will not desire to sever the connection with Great Britain. As a means of strengthening the national sentiment, he has purchased a tract near Cape Town, on which will be built a South African university. In the Transvaal, President Kruger was not inclined to sanction the immediate entrance of the Republic into the proposed South African customs union, and Gen. Joubert favored a commercial league with Natal against Cape Colony on condition that Zululand should be thrown open to Boer settlement. The customs union proposed by the Cape Government was joined only by the Orange Free State, but in the Swaziland convention of 1890 the Transvaal Government had bound itself to enter the union within three years. The Boers complained because the British Government withheld the reasonable concessions that they desired in Swaziland.

Pondoland.—The native district of Pondoland, which forms a part of the territory of Cape Colony, has a population of 200,000, ruled by their own chiefs under the supervision of a commissioner of the Cape Government. The country was ravaged in the early part of 1891 by a war between the rival chiefs Sigean and Umhlangaso, who destroyed the crops and burned

down the huts in all directions. The Colonial Government abstained from interfering, except with admonitions. Sigcau was victorious.

Natal.—The colony of Natal, which was separated from Cape Colony in 1856, is negotiating the basis of a parliamentary constitution with the home Government. The Governor, Sir Charles B. H. Mitchell, succeeded Sir A. E. Havelock in 1889. The area of the colony is estimated at 21,150 square miles, and the population in 1889 at 530,158, comprising 37,390 Europeans, who are mainly English, 33,480 natives of India, and 459,288 Caffres. The increase, over 50 per cent. on the total for 1879, has been little greater in the European than in the native population. In 1878-'84 there were 4,526 assisted immigrants brought into the colony, and in 1889, when assisted immigration was resumed, 759 European colonists were introduced. The revenue of the colony in 1889 was £1,327,105, against £990,614 in 1888 and £600,177 in 1886. The expenditure in 1889 was £1,146,079. The customs duties collected in 1890 were £329,000.

The revenue from railroads in 1889 was £458,698; customs, £369,460; excise, £23,471; land sales, £34,613; posts, £44,965; telegraphs, £28,412; and £76,004 from the native hut tax. The chief expenditures were £512,698 for railroads, £76,195 for public works, £54,018 for defense, and £24,678 for education. There was a loan expenditure of £790,370, and the debt at the end of the year amounted to £5,035,126. The value of the imports in 1889 was £4,527,015, and of the exports £1,656,318. The exports of wool, amounting to £752,182, of gold, amounting to £584,933, of hides, of the value of £55,829, and of skins, Angora hair, and other products, come largely from the neighboring Boer republics. The exports of Natal products amounted to £957,132, the chief articles being raw sugar and rum. The number of vessels entered in 1889 was 555, of 513,360 tons.

The Legislative Council, under the present Constitution, consists of 24 elected and 7 nominated members. A bill to provide for the establishment of responsible government was submitted to the Colonial Office in April, 1891. It proposed that the Legislative Council should consist of 37 elective members, but had no provision for an upper chamber. As in former negotiations the colonists have insisted on the control over native affairs, so in this draft it was provided that the authority of the Governor, as paramount native chief, should be exercised by the Governor in Council. The London authorities refused to assent to this, and to a clause setting apart an annual sum of £20,000 for native purposes, but giving the control of the items of expenditure to the Legislative Council. Lord Knutsford was firm in reserving to the Governor, as the representative of the Crown, free from the influence of the colonial ministers, the political administration over the native communities and the command and disposition of British troops, and in keeping under the direction of the home Government all action affecting imperial interests or governing the fulfillment of international obligations. Whatever sum was stipulated in the compact as a minimum appropriation for the welfare and education of the natives, he proposed to have placed, as in Western Aus-

tralia, under the control of a native protection board. The colonial representatives changed the language of the clauses, but not the meaning, in such a way as to meet the objections of the Colonial Office, and the remodeled bill, approved by the Legislative Council in July, was pronounced unsatisfactory by the Imperial Government. A code of native law enacted by the Legislative Council in 1890 was vetoed by the Governor on the ground that it would interfere with the prerogative of the Imperial Government to make laws for the natives.

Bechuanaland.—The Crown colony of British Bechuanaland has an area of 43,000 square miles, and a population estimated in 1885 at 44,135. Sir Sidney G. A. Shippard, the Administrator, is also Resident Commissioner for the British Protectorate of Bechuanaland, which extends northward to the Zambezi, having Matabeleland on the east, and westward over the Kalaharie Desert to the border of the German Protectorate in Southwest Africa. In May, 1891, the tract called Bastards' country, lying between the twenty-first meridian, the former boundary of Bechuanaland, and the twentieth meridian, the conventional limit of the German Protectorate of Namaqualand, was annexed by proclamation. The reason given for the annexation was that peace was endangered by a *trek* of Boers and Damaras. When Mr. Rhodes was in England, during the Anglo-Portuguese negotiations in the spring of 1891, he obtained for the Cape the right to annex Bechuanaland.

German Southwest Africa.—In 1885, in the early days of German colonial enterprise, Herr Lüderitz, a German merchant, secured from native chiefs coast lands at Angra Pequena, in Damaraland, and on the opposite side of the continent at St. Lucia Bay, in Zululand, with the expectation of planting German colonies, opening up communications with the Transvaal, extending German trade into the Zambesi region, and establishing a zone of German influence reaching from shore to shore north of the regions to which British activity was at that time confined. The Gladstone Government was spurred to action by the protests of Cape Colonists. A gunboat was sent from Cape Town, which planted the British flag at St. Lucia Bay only a few days before the German gunboat arrived. An official expedition was conveyed to Damaraland by a German man-of-war, and though Dr. Nachtigal, its head, was unable to make a treaty of protection with Kamahehero, the paramount chief, Dr. Göring, some months later, induced him to sign one which he has since desired to repudiate. Though the British Government refused to interfere with the German designs on the southwest coast, the Cape Colonists made efforts to defeat them. They prevailed on the Imperial Government to reoccupy Walvisch Bay, the chief harbor and source of water supply. Robert Lewis, who had long resided among the Damaras, procured from Kamahehero a concession of mining rights, of the right to build railroads, and of other commercial privileges, about a month before the German treaty was signed. The German Colonial Company for Southwest Africa, to which Herr Lüderitz assigned his rights, found itself hampered by the intrigues of

the Cape Colonists, who got the natives to hinder the Germans in their enterprises. Lewis was prevented from making use of his mining privileges by a code of regulations drawn up by the German officials. After he and two Englishmen named Ford and Bam were banished from Damaraland for political plotting in 1890, the English Government intervened diplomatically to urge his claim before the Berlin authorities. The Anglo-German African agreement destroyed the hopes of profitable trading or pastoral operations, and left nothing but the mineral resources of the country for the Germans to fall back upon. The capital of the Colonial Company was exhausted, and it was decided to organize a new company, with offices in Hamburg, and appeal to the London market for a part of the capital. The German Reichstag in February, 1891, voted 100,000 marks to continue for one year longer a staff of officials and a force of 40 or 50 police in Damaraland. On April 6 the Colonial Department of the German Foreign Office declared Lewis's general mining concession of Sept. 9, 1885, null and void, on the ground that it was obtained with the political object of withdrawing Damaraland from German influence and bringing it under the rule of a foreign power, and could not, therefore, be regarded as a private contract or serve as a basis for private rights. Dr. Golding, the Imperial Commissary, retired in April, and was succeeded by Capt. Von François, who had previously commanded the police force. The new German company expects to build a railroad across the country. Lewis transferred rights to 50,000,000 acres near Wal-fisch Bay and gold fields on the Orange river to an English company that was organized in London in February, 1891.

Ngamiland.—The country around Lake Ngami, to which Germany and Great Britain both laid claim, was abandoned to Great Britain by the Anglo-German settlement of 1890. The African and General Exploring Company was organized to investigate the mineral and commercial resources of this region. South of the lake a large number of quartz reefs have been discovered. The death of Moremi, head chief of the Towana nation, on Nov. 4, 1890, left the country in a disorganized and unsettled condition. The next heir is a youth named Sec-home, half-brother of Moremi and nephew of Khama, the Bechuana king, and during his minority an unpopular chief named Dithapo acts as regent. The Towanas are only one of several tribes settled in the country, but under Moremi they held the others in subjection, except the invading Namaquas, who disputed with them the sovereignty over the country. From the latter the Germans obtained their title.

British Zambesia.—The country reserved to Great Britain in the Anglo-German and Anglo-Portuguese agreements of 1890, lying north of Bechuanaland and the South African Republic, is under the administration of the British South Africa Company, which was created by a royal charter signed Oct. 29, 1889. The sphere of the company's activity at present comprises Mashonaland, Matabeleland, and Manica. It is empowered to take over other districts, subject to the approval of the Government, including Northern Bechuanaland or Khama's country,

the region between that and the German boundary, and, in fact, all parts of South Africa within the sphere of British influence and not hitherto administered by British officers up to or beyond the Zambesi. Lobengula, King of the Matabeles, a tribe numbering 200,000 souls, has an army of about 15,000 men, armed with modern rifles obtained from the English, and has been accustomed to raid and pillage the country of the Mashonas, the Makalakas, and other surrounding tribes. During the first year of its existence the chartered company built an extension of the railroad from the Cape to the diamond fields of Griqualand West, continuing it northward from Kimberley to Vryburg, 126 miles. This section, which was opened Dec. 3, 1890, was sold to the Cape Government for £700,000, and the company went to work on a further extension of 98 miles to Mafeking.

The climate of the plateau of Mashonaland, which is 4,500 or 5,000 feet above the sea, and of Matabeleland, a hilly country of forests, streams, and pastures, is said to be healthful for Europeans. The nights are cool in summer, and the long winter is invigorating. There is plenty of good soil easy of cultivation. English enterprise was attracted to this country by the gold-bearing reefs that were known to exist there more than twenty years ago. The claims raised by Portugal to the valley of the Zambesi impelled Cecil Rhodes and his associates to organize the British South Africa Company for the purpose of securing for England all the high and healthful regions and the auriferous lands. Mining concessions had already been granted by the Portuguese authorities to British subjects, but the holders were bought out or given shares in the chartered company. Alluvial gold is found in all the stream beds, but seldom in paying quantities. The quartz in the reefs discovered by Thomas Baines in 1870 at the junction of the Umfuli and Simbo rivers assays 3 or 4 ounces to the ton. Attempts to work the Tati mines without proper machinery have failed. The Jumbo reef, near Fort Salisbury, has many old shafts. Four gold fields were opened, besides the Manica district, and mining commissioners and claim inspectors were appointed in the early part of 1891. These were the Umfuli and Hartley Hill, Lo Magoudi, Mazoe, and the Kaiser Wilhelm or Matoko districts. No prospecting has been done in Matabeleland for fear of rousing the hostility of Lobengula. As soon as the Chartered Company was formed, a police force of 500 men was raised to take possession of Zambesia. A telegraph was completed to Palapwe, in Khama's country, 315 miles from Mafeking, in British Bechuanaland, by Oct. 14, 1890. The pioneer expedition of 180 picked men, escorted by a part of the police force, advanced from the Macloutse river, where the rest of the police remained to keep open communications and protect the base. Crossing the river on June 25, 1890, they built a road as they marched, and in ten weeks arrived at Mount Hampden, Mashonaland, 300 miles from the Macloutse, with their ox wagons, machine guns, a steam engine, and other material. A fort was erected at the Tuli drift, one at Fort Victoria, on the edge of the Mashona plateau, and later Fort Charter was built, and Fort Salisbury, near Mount Hampden,

which was made the headquarters of the administration. The company, which has a paid-up capital of £1,000,000, derives its revenue from trading licenses, registration fees, and mining concessions, which it has the power to tax to the extent of 50 per cent. of the output of gold. It agreed to give a subsidy of £9,000 a year to the African Lakes Company, with a view to the eventual amalgamation of the two. The local administration was placed in charge of A. R. Colquhoun and Dr. Jameson. The former went secretly into Manica, to conclude treaties and obtain concessions that could be set up as counterclaims to defeat the Portuguese title. On Sept. 14 he made a treaty with Umtasa, the local chief of Manica, who is said to be independent of Gungunhama and free from all obligations to the Portuguese. The Portuguese claimed sovereignty over the independent Mashonas, and through their vassal Gungunhama, King of Gazaland, over Manica. The British asserted that all Mashonaland and the Barotse country north of the Zambesi were tributary to Lobengula, whom they claimed as a vassal. The draft agreement of Aug. 20, 1890, which fixed the eastern boundary of the English sphere at the Sabi river was rejected by the Portuguese Cortes. Seven weeks after the treaty of protection was made with Umtasa, Col. Paiva d'Andrade and the half-cast Gouveia, otherwise known as Gen. Manuel de Souza, who was the official administrator or Capitão Mor of the district, arrived at Umtasa's kraal engaged on a survey for a railroad. They were met there by English officers who announced the British annexation of the country. Major Forbes, who had a force of police within call, at a public meeting, at which Umtasa formally acknowledged that he had ceded his country to the Portuguese twenty years before, put a sudden end to the parley by seizing Col. d'Andrade, Baron Rezende, and Gouveia in the presence of the chief and his *indunas* and English and American prospectors who were working under licenses issued by the Mozambique Company. The English flag was again hoisted, Massikessi was occupied and garrisoned, and the Portuguese officers were carried prisoners to Fort Salisbury. At various places in Mashonaland where the Portuguese flag was flying the chiefs submitted to the British occupation after the seizure of Gouveia. Moloko, the paramount chief of the country north of Manica, changed his allegiance by making a treaty with F. C. Selous, an agent of the Chartered Company. Negotiations were begun with Gungunhama to make him transfer his allegiance to England.

Before these events were known in Europe a *modus vivendi* was signed in London, on Nov. 14, 1890, by which the British and Portuguese governments agreed to preserve the *status quo*, and each to respect the possessions actually held by the other pending the adjustment of disputes by a treaty of delimitation. The temporary arrangement was valid for six months.

The wagon route of 900 miles from Vryburg was not adapted for the transport of crushing machinery and miners' supplies, and therefore the English desired to obtain possession of the road from the east coast by way of the Pungwe river. From Beira, the port of the Pungwe

river, to Mount Hampden the distance is only 380 miles, of which 120 miles can be made in small steamers on the river. When the English learned of this route, over which the Portuguese expected to build a railroad to their mines in Manica, the railroad that had been begun between Vryburg and Mafeking was abandoned. On Dec. 6 Major Forbes took formal possession of the whole country between Manica and the sea, lying between the Pungwe and the Busi rivers. On Jan. 3, 1891, Lieut. Freire went to Massikessi as the bearer of an official message to the British officer in charge informing him of the *modus vivendi*. The English officer refused to receive the notice, and placed the messenger under arrest. An expeditionary force of volunteers who had arrived from Portugal set out for Massikessi and Manica, but were kept back by orders sent from Lisbon, and employed in working in the harbors.

The violation of the agreed boundary and the abduction of Portuguese officials in Manica after the *modus vivendi* was concluded, seemed likely to result in a collision between the forces of the Chartered Company and the bands of young Portuguese who volunteered to defend their country's rights in Africa, and possibly in a native war between the English and the forces of Gungunhama or Lobengula. Sir Henry Loch and Mr. Rhodes hastened to England to ward off a catastrophe by bringing about a settlement of the dispute with Portugal. The Mozambique Company reorganized with the aid of French capital, obtained a regular charter conferring the power to administer and exploit these regions of Africa, to levy taxes and impose import duties, to make treaties with native chiefs, and to carry on or grant concessions for mining and other undertakings. The company engaged within a specified time to build a railroad from Beira, at the mouth of the Pungwe, to Massikessi, on the borders of the Manica territory. The country handed over to the jurisdiction of the company was that bounded on the north by the Zambesi down to its mouth, on the north-west by the district of Tete, on the west by the boundary of the province of Mozambique, on the south by the Sabi or Save river, and on the east by the ocean. These limits included about 9,500 square miles that were in dispute, including Manica and the gold fields there, to which miners were flocking from all countries. An Anglo-American company had been formed for the purpose of establishing a service of river steamers and wagons by the Pungwe route.

Several Englishmen who attempted to import arms or who refused to acknowledge Portuguese authority on this river were stopped. The "Countess of Carnarvon," which had gone up the Limpopo with a cargo of arms, was seized by a Portuguese gunboat on Feb. 22, 1891. Dr. Jameson and other officials of the British South Africa Company were on board the English steamer, which had made a previous voyage on the Limpopo, and found it navigable as far as the junction of the Nuanetsi, at the boundary line of the territory claimed by the South Africa Company. The arms (1,000 rifles with 20,000 rounds of ammunition) had been landed on the banks of the Limpopo to enable, it was supposed, native chiefs in the district of Inhambane to rebel against Portugal. The Governor-Gen-

eral of Mozambique declared a state of siege in Sofala and Manica, because agents of the South Africa Company went about inciting the natives to revolt. The Portuguese authorities at Beira, while leaving the route open on condition of the payment of 3 per cent. transit dues, insisted on the recognition of Portuguese sovereignty. The mails had to pass through the Portuguese post-office, and when Gen. Willoughby, at the head of an armed expedition, sailed up the Pungwe in the "Alice," flying the British flag, the vessel was stopped and the Portuguese flag hoisted. While negotiations were going on between the two governments, Gungunhama, whose *indunas* had signed a treaty accepting a Portuguese protectorate at Lisbon in 1885, was persuaded to send an embassy to London to pray for a British protectorate. The Portuguese collected an army of 10,000 natives at Sena in preparation for the hostilities threatened by the South Africa Company. Natives who were subject to Gouveia's rule revolted, and were with difficulty reduced to submission.

Sir John Willoughby's party, which was stopped at the mouth of the Pungwe, was only the advance guard of a large body of immigrants that the agents of the South Africa Company had recruited in order to force the route open and flood Manica with adherents of the company. Major Johnston, who had been the leader of the pioneers into Mashonaland, followed with several hundred well-armed miners, whom he conducted across Portuguese territory from the coast. When they had almost reached Massikessi they were met on May 11 by the soldiers of the Portuguese outpost, part blacks and part the student volunteers from Lisbon, and, after fighting several hours, killing seven Portuguese and losing some of their own men, the English won the battle. The Portuguese force, commanded by Major Caldas Xavier, was returning from an unsuccessful attack on the fortified post of Chovaa, held by the British South Africa Company's police, four miles west of Massikessi.

Anglo-Portuguese Agreement.—To prepare the way for a settlement of the South African controversies, it was necessary for the officers of the South Africa Company to satisfy the claims of the promoters of the Mozambique Company. Arrangements were made by which individual interests were secured, and English capital was raised to enable the Portuguese company to work in the profitable field that was assigned to it. Lord Salisbury offered terms that were more favorable than those contained in the abortive treaty of Aug. 20, 1890, and the Portuguese Cabinet, knowing that a refusal of these would result in the loss of all their South African possessions, hesitated only through fear of popular dissatisfaction that would again defeat the treaty and drive them from office, and possibly result in the overthrow of the monarchy. The principle followed was to reserve to England all the healthful highland country adapted for European settlement and to concede to Portugal all the low-lying territory that can be inhabited and cultivated only by colored races. To carry out this idea and to gain Manica, the only immediately attractive gold district since Matabeleland was closed, the English Government made an important concession—that of 50,000 square

miles north of the Zambesi, thus abandoning the cherished idea of continuous communication under British jurisdiction through northern Zambesia and Nyassaland, Lake Tanganyika, and Uganda, up to the Soudan. The draft of a new treaty was completed in London on May 14, the day on which the *modus vivendi* expired. Instead of the narrow triangle of land north of the Zambesi, bounded by that river and the Shire on one side and by a line drawn from opposite the Ruvo to near Tete on the other, the new treaty gives to Portugal the whole north bank between the Shire and the Loangwe. The boundary starts from the Shire just below its junction with the Shiwanga, proceeds by an irregular line in a northwesterly direction to the intersection of the fourteenth parallel of latitude with longitude 33° 30', and thence in a southwesterly direction to where the fifteenth parallel intersects the Loangwe river, and follows the channel of the river down to the Zambesi at Zumbo. In Central Africa the English sphere is made coextensive with the Barotse kingdom, which is supposed to reach far beyond the sources of the Zambesi, the limit laid down in the former treaty, and approach the Portuguese settlements on the Angola coast. South of the Zambesi the territory allotted to the British South Africa Company is enlarged, but yet the Portuguese retain a slice of Manicaland. Along the south bank of the Zambesi, Portugal has the ten-mile strip at Zumbo allowed in the former treaty. After a few miles the line in latitude 18° 30' turns sharply to the southeast and strikes the Mazoe at about 33° of east longitude, and thence the limit of the British South Africa Company's territory is drawn directly southward to within a few miles of the Limpopo, where it turns to the southwest, leaving the mouth of that river in the possession and control of Portugal. The frontier proposed before ran south from the Makoe along the thirty-third meridian for about a degree, and then turned westward and followed the course of the Sabi river, giving the whole of Manica to Portugal. In the new frontier a *détour* is made near Massikessi, where substantial Portuguese houses and large stores of trade goods existed at the time when it was seized by the English, in possession of the Portuguese, with a patch in the neighboring highlands to which Portuguese officers can repair in hot weather. Umtasa is left to the English, and the line in Manica is drawn along the eastern slope of the plateau, it being understood that all territory east of longitude 33° will be Portuguese and all west of 32° 30' will belong to Great Britain. The exact line of demarkation is to be settled by a joint survey.

In Central Africa the dividing line between the British and the Portuguese spheres of influence is formed by the middle of the channel of the Zambesi from the Katima cataracts northward to the Barotse country, and then follows the western boundary of that territory. The delimitation will be made by an Anglo-Portuguese boundary commission, and any disputes that may arise will be referred to arbitration. In case either country desires to alienate any part of the territory south of the Zambesi, the other shall have a pre-emptive option. Portugal guarantees religious freedom in all her possessions of

East and Central Africa. For twenty-five years the transit dues across Portuguese territories shall be 3 per cent., unless in the course of five years the British Government commutes the dues and secures perpetual freedom of transit by paying to Portugal the capitalized value of £30,000 per annum at 3 per cent. interest—that is, a lump sum of about £1,000,000. Precious metals and specie are exempt from duty. In the districts north of the Zambesi above the confluence of the Shire and south of the Zambezi above the Luenha, British merchandise is not subject to duty, and the same exemption is secured for Portuguese merchandise in its transit across British territory in Nyassaland. Each power has the right to construct railroads, roads, or telegraphs across the territory of the other in the same regions, subject to local laws and regulations. Each power shall respect all rights of private property and mining concessions granted by the other in the territories hitherto in dispute and now divided. Disputed titles to claims within thirty miles of the frontier shall be referred to arbitration. Navigation on the Zambesi and the Shire shall be free to the ships and flags of all nations on the terms laid down for international African rivers in the General Act of the Congo. The Limpopo is not made an international river; but, except on the Pungwe, the Portuguese Government engages to allow and to facilitate transport. It also promises to construct a railroad from the coast to the borders of the South Africa Company's territory, either along the Pungwe or in the valley of the Busi. The surveys for the railroad must be completed in six months from the conclusion of the treaty, and the date by which the line must be finished was then to be agreed upon by the two governments. If the Portuguese Government does not carry out the agreement, it must allow a company to be chartered by some neutral power to build the railroad. It promises to construct a line of telegraph and to keep open a highroad from the Pungwe to the British frontier. Outside the treaty an agreement was entered into whereby a British company can establish wharves and warehouses on the Chinde, and a Portuguese company shall have the same privilege on the southwest shore of Lake Nyassa.

The bases of the new treaty were signed in London on May 28. Lord Salisbury stipulated that the treaty should be ratified by the Cortes before being signed by the British Government. The *modus vivendi* was continued by agreement for another month. The treaty was approved, with only six dissentient voices in the Chamber, on June 6, and by an equally large majority of the Senate, and on June 11 was signed at Lisbon. Senhor Ennes and Major Leverson, the Portuguese and English boundary commissioners, went to Manica to begin the delimitation in July.

After the removal of the differences with England, the Portuguese Government relieved itself of the expenses connected with the administration of Mozambique, estimated at £155,000 a year, by separating it from the province of Lourenço Marques and delegating all its sovereign rights south of the Zambesi to the Mozambique Company, which has come partly into the control of Englishmen. The head of the local administration on the coast will be a royal com-

missioner, who will reside alternately at Lourenço Marques and Mozambique. A railroad is to be built from Quilimane to the Shire river. The territory in the Zambesi valley will be handed over to chartered companies.

Gungunhama's Embassy.—The intrigues of the British South Africa Company to acquire the Portuguese sea-coast were not countenanced by the Marquis of Salisbury, who was prepared to abate the British pretensions and make sacrifices after the high-handed acts of the English in Manica and on the Pungwe and their treacherous incitement to rebellion of the black subjects of Portugal, lest a Portuguese revolution and war in Europe should result. The coming of Gungunhama's envoys did not shake his decision. By a treaty made in 1817, and in fuller terms in the treaty of 1847, the Gaza country—that is, the whole Mozambique littoral from the Zambesi to Delagoa Bay—was recognized by Great Britain as belonging to Portugal. Lord Salisbury declared, to the chagrin of the managers of the South Africa Company, that he would have nothing to do with Gungunhama. The monarch of the Gaza Zulus is a grandson of a rebellious vassal of King Chaka who fled with his followers from Zululand and conquered the country north of the Limpopo in the early part of the century. Another rebel chief migrated westward and founded the Matabele Kingdom. Gungunhama, when visited by the emissaries of the British Company, denied that he owed allegiance to the Portuguese. Though he had raised their flag over his kraal ever since his succession, he said it was merely a token of friendship; that Gouveia paid him tribute for the country that he occupied; and that the Portuguese governor, in sending him presents at regular intervals, acknowledged him as over-lord. Eight years before he had petitioned the Natal authorities for British protection. Now he sent Huluhulu, his ambassador on that occasion, and Umfeti to the "Great White Queen" with the message, "I want her to hold me up and be my shield." While these messengers were on the way to England, the faithless King sent another embassy to Lourenço Marques with a message declaring his vassalage and fidelity to Portugal, and offering to fight for the Portuguese with all his forces if any one should attack their dominions.

The Boer Trek.—While the British pioneers were pushing their conquests into Portuguese territory, they had to protect their allotted domain from the long-threatened Boer invasion. By virtue of a treaty made by the Banyai chief Chibe with Commandant Potyaeter and another concession secured by one Adendorf, the Transvaal Boers claimed Banyailand, the most fertile part of Mashonaland, and many were willing to join an expedition, under the lead of Vorster, Adendorf, and Col. Ferreira, for the purpose of taking forcible possession of that region and establishing a republic. Sir Henry Loch sent troops from the Cape to relieve the Bechuana-land police, and the latter took the place of the British South Africa Company's police, enabling the company's officers to place a strong guard at every crossing of the Limpopo. President Kruger issued a vigorous proclamation, in conformity with the obligations imposed by the convention of August, 1890, and he was sustained by

the Volksraad, which, on April 25, decreed the penalty of £500 fine or a year's imprisonment with hard labor. The leader of the Afrikaner Bond, Mr. Hofmeyr, obtained from the British Government a promise that it would allow a Boer republic to be set up in Swaziland. This and the offer of free farms of 3,000 acres in Mashonaland to any Boer who would accept the jurisdiction and conform to the statutes of the British South Africa Company, removed the reason for a hostile invasion, which was imminent in spite of the military preparations of the British and the co-operation of the authorities of the South African Republic. Several thousand *trekkers* came from the Orange Free State and encamped near Pretoria in May. Having gained without fighting the right that the English Government has hitherto denied of free settlement in the country north of the Limpopo, the *trekkers* disbanded. Col. Ferreira still wished to make a demonstration. With a party of about 200 he crossed the Limpopo on June 24, at the Main Drift. The main body on the opposite bank of the river prepared to make a forcible entry. Dr. Jameson crossed over and explained that they could all have farms, whereupon many expressed a willingness to take land from the company, and no further hostile manifestation occurred. Many Boers afterward entered Banyailand and selected farms, although the leaders of the *trek* had insisted that the titles that they held from the local chiefs were a valid conveyance, whereas the company had not the shadow of a title, for Lobengula possessed no rights of any kind in this country, and even if he did he had made no grant of lands in any part of his dominions, but only mining rights, to the individuals who had assigned their concessions to the British South Africa Company.

Development of Mashonaland.—After the settlement of the Anglo-Portuguese dispute, a part of the military police force was disbanded, and the members took up mining claims. Up to July 15 there had been issued 1,557 prospecting and 67 trading licenses, representing as many individual settlers. Of mining claims there were at that date 5,967 in force, besides 2,372 protection certificates. The bulk of these claims were situated near Fort Tuli and in the Umfuli district. In addition, 200 claims for silver and tin found in the Manica district had been registered. A gold claim includes 150 feet in the direction of the reef and 200 feet on either side, and to make it valid the miner must sink a shaft 60 feet. The mining operations were placed under the direction of Mr. Rolker, an American engineer. The settlers suffered much from fever and dearth of food during the rainy season. From lack of tools they were delayed in their work. The tall grass and the tsetse fly are serious hindrances to transport. A road was built from Fort Salisbury to the Kaiser Wilhelm field, 130 miles. This is the only district, except in Manica, where placer mining promises well. For a long period Portuguese traders have visited it to buy gold from the natives.

The Mozambique Company has arranged with French engineers for the building of a railroad from Beira to Massikessi, a telegraph line, and docks. The capital of the company is £1,000,000. The Portuguese Government gets the railroad for nothing at the end of thirty years.

CHEMISTRY. Chemical Theory.—In his address on assuming the chair of President of the American Chemical Society for 1891, Prof. George F. Barker spoke of the discovery of the periodic law as marking an important epoch in the progress of the physics of chemistry as well as of pure chemistry. For not only does that law assert that the purely chemical properties of the elements are periodic functions of the masses of their atoms, but it asserts also that their physical properties are like functions. New researches were undertaken by the chemist to fix more precisely these atomic masses, new calculations were made upon data already accumulated, and new relations were experimentally established going to show the position of the doubtful elements in the periodic series; and the most elaborate experiments were begun also by the physicist upon the phenomena of solution, of density, of specific heat, of refraction, of electric conductivity, and the like, in order to connect these physical properties with the mass of the atom, and thus to establish the predominant influence of the atom, even in molecular physics. The address was devoted to outlining some of the important relations existing between chemistry and physics and to indicating the directions of investigation in this borderland between the two sciences. Attention was called to the importance of making the terminology of the two more in harmony and more accurate, particularly of observing the distinctions in the use of the terms atom and molecule and mass and weight; of the line of study suggested by the analogy pointed out by Van't Hoff between gases and dilute solutions, or the application of the kinetic theory to solutions; of the study of electrolysis and of spectrum analysis and the later theories of the origin and relations of the elements. The facts thus far brought out in the investigations of these subjects indicate "a tendency toward a true statics and dynamics of atoms; toward a condition of exact science which will confer upon chemistry the power of prediction."

Of the two methods which the technologist may pursue in acquiring his art, that which begins with learning the scientific principles that lie at its base and proceeds to the application of them is called by Prof. Meldola the *synthetical* method, while that in which he first seeks proficiency in practice, to become familiar with the science afterward, is called the *analytical* method. Of the relative merits of these two courses in application to arts dependent on chemistry, Prof. Meldola says that the analytical method is too cumbersome and too circuitous to be of any real practical use. It is possible to lead an intelligent mechanic from his every-day occupation to a knowledge of the higher principles of mechanical science by making use of his experience of phenomena which are constantly coming under his notice. But "no person engaged in chemical industry in any capacity, whether workman, foreman, manager, or proprietor, can be taught the principles of chemical science out of his own industry unless he has some considerable knowledge of general principles to start with. No person who is not grounded in such broad principles can properly appreciate the explanation of the phenomena with which his daily experience brings him into contact, and if his previous

training is insufficient to enable him to understand the nature of the changes which occur in the course of his operations, he can not derive any advantage from technical instruction. These remarks will, I hope, serve to emphasize a distinction which exists between technical chemistry and other technical subjects. . . . The reason for this difference in the mode of treatment of chemical subjects is not difficult to find. The chemical technologist—the man who is engaged in the manufacture of useful products out of certain raw materials—is, so far as the purely scientific principles are concerned, already at a very advanced stage, although he may not realize this to be the case. The chemistry of manufacturing operations, even when these are of an apparently simple kind, is of a very high order of complexity. There are many branches of chemical industry in which the nature of the chemical changes undergone by the materials is very imperfectly understood; there is no branch of chemical industry of which the pure science can be said to be thoroughly known. For these reasons I believe that I am justified in saying that the chemical technologist is working at a high level, so far as the science of his subject is concerned, and this explains why he can not be dealt with by the analytical method."

MM. Lecq de Boisbaudran and A. de Laparent claim priority in the discovery of the periodic law of the chemical elements for M. Béguyer de Chancourtois, Chief Engineer and Assistant Professor of Geology in the School of Mines, who, on April 7, 1862, presented to the Academy a paper "On a Natural Classification of the Simple or Radical Bodies entitled 'The Telluric Screw,'" and followed it with other communications. The telluric screw was a device for graphically representing the relations of the atomic weights, from the examination of which it appeared that those relations corresponded for the most part to real analogies in the properties of the corresponding elements. Mr. John Newland's first publication on the subject was made July 30, 1864, the publications of Profs. Mendeleef and Lothar Meyer of their independent and simultaneous discovery of the same truth were made later.

Those compounds are called tautomeric by Laar which apparently react in a manner indicated by two constitutional formulæ differing from one another. It is assumed that in such bodies the atoms oscillate between two different portions of equilibrium. This interpretation does not permit the use of the term constitutional formula in its proper sense which would permit only one of those positions recognized from allied reactions) to be considered correct. The other position would not belong to the substance *per se*, because the reactions according to which it has been derived have caused a change of position of the atoms within the molecule. Incorrect formulation of the chemical equations for these reactions may be the reason for the apparent contradiction of the principles of structural chemistry which these phenomena of change within the molecule offer.

In his presidential address before the Institution of Electrical Engineers, Dr. William Crookes spoke of electricity as a tool by the judicious use of which we may gain some addition to our scanty knowledge of the atoms and molecules of

matter, and of the forms of energy which by their mutual reactions constitute the universe as it is manifest to our five senses. Working as a chemist in the laboratory, the author had found the induction spark often of great service in discriminating one element from another, as well as in indicating the presence of hitherto unknown elements in other bodies in quantities far too minute to be recognized by any other means. In this way chemists have discovered thallium, gallium, germanium, and numerous other elements. On the other hand, in the examination of electrical reactions in high vacua various rare chemical elements become in turn tests for recognizing the intensity and character of electric energy. Electricity, positive and negative, effect respectively different movements and luminosities. Hence the behavior of the substances upon which electricity acts may indicate with which of these two kinds we have to deal. In other physical researches both electricity and chemistry come into play simply as means of exploration.

Chemical Physics.—A laboratory of low temperatures has been established by Prof. Pictet at Berlin by the aid of which new conditions for investigating the properties of matter are realized, and new facts have been brought to light in various branches of science. The refrigerating machinery is designed to withdraw heat from the objects under observation, and to keep them as long as may be required at any desired temperature between -20° and -200° C. Of the refrigerating processes at the command of the experimenter, that by the evaporation of liquids is preferred. The apparatus is adapted to the production of three stages of low temperature, for each of which special machinery is provided. For the first stage the Pictet liquid—a mixture of sulphurous and carbonic acids—is used; for the second, laughing gas; for the third stage, liquefied atmospheric air, the evaporation of which causes the thermometer to fall below -200° C. Under the experiments with these apparatus a remarkable difference was noticed in the radiation of heat. Material considered as non-conducting does not appear to affect much the passage of heat into a body cooled down to below -100° ; or, as Prof. Pictet expresses it, "the slow oscillations of matter which constitute the lowest degrees of heat pass more readily through the obstruction of a so-called non-conductor than those corresponding to a higher temperature, just as the less intense undulations of the red light are better able to penetrate clouds of dust or vapor than those of the blue." It is mentioned, as an example of the methods which the refrigerating machine permits the investigator to employ, that, in order to measure the elasticity of mercury, Prof. Paalzow had the metal cast into the shape of a tuning-fork and frozen hard enough for the purpose in view. On this occasion it appeared that quicksilver can be shown in a crystallized state in fern-like crystals. The most important application of the refrigerating machinery is in the purification of chloroform, by which that exceedingly unstable substance becomes a practically unchangeable liquid. Sulphurous ether is also produced in a hitherto unknown degree of purity.

Liquid oxygen has been hitherto described as colorless, and so it appears to be in thin layers;

but M. Olszewski, in the course of his investigation of the absorption spectrum, has obtained a sufficient quantity of the liquid 80 millimetres thick, and has discovered that it possesses a blue color like that of the sky. The direct experiments on its absorption spectrum show that this color is exactly what one would expect from its nature. The author suggests that the blue color of the sky may be simply due to the atmospheric oxygen, which in gaseous layers of such extent may exhibit the same color as when compressed into a few centimetres of liquid. Apart from the discussion of this debatable subject, the fact is of interest to chemists that ordinary oxygen and its condensation allotrope, ozone, when compressed into the liquid state, are thus related as to color, the former possessing a light-blue and the latter a deep-blue tint.

The results of an examination of the properties of liquid chlorine have been published by Dr. Knietseh, of Ludwigshafen, in Liebig's "Annalen." The work included the determination of the vapor density of liquid chlorine at temperatures from -88°C . to $+146^{\circ}\text{C}$. (its critical point), a complete examination of its behavior near the critical point, and the determination of its specific gravity and coefficient of expansion for a range of temperature between -80° and $+80^{\circ}$. Liquid chlorine generally appears to possess a yellow color. When, however, the color of a long column is examined it is found to have a distinctly orange tint. The absorption spectrum does not exhibit any characteristic bands, but the blue and violet portions of the spectrum are completely absorbed, and the transmitted spectrum thus consists of the red, orange, yellow, and green. The pressure is given for every five degrees up to 40°C ., and thence for every ten degrees up to the critical point, 8.66 atmospheres at 0° , 5.75 atmospheres at 15° , 11.5 atmospheres at 40° , and 93.5 atmospheres at the critical point, 146° . Some very interesting results were obtained in determining the critical point, the yellowish-green color of chlorine perhaps assisting in rendering the appearance of what has sometimes been termed the fourth state of matter between the liquid and the gaseous more distinct than usual. At 140°C . extremely small bubbles began to be developed through the mass of the liquid, at 144° the hitherto sharp meniscus began to disappear, and at 145° the presence of a liquid was evident only by the more intense yellow color and the higher refractive power of the lower portion of the tube. At 146° the contents of the tube were homogeneous throughout, the critical point being attained and the liquid converted into a gas. On cooling, the condensation always began below 146° , with the formation of a cloud and a fine rain of minute yellow spheres of liquid chlorine. Liquid chlorine is proved to be a very expansible substance. The coefficient of expansion at 80°C . is already 0.00346, nearly equal to that of gaseous chlorine, and is rapidly increasing, so that before the critical temperature of 146° is attained the coefficient of expansion will be considerably higher than that of the gas.

The experiments of Prof. Vivian B. Lewes on the spontaneous ignition of coal led him to reject the explanation of Berzelius, which attributes spontaneous ignition to the oxidation

of pyrites contained in the coal. The heat given off by the combustion of pyrites would not be sufficient to raise the temperature of the adjacent coal to the ignition point. The cause of spontaneous ignition is to be found, on the other hand, rather in its power—especially when finely divided—of absorbing oxygen, which causes the slow combustion of some of the hydrocarbon constituents even at ordinary temperature. The action may increase under favorable conditions until ignition of the coal results. The risk is greatest with large masses of coal and with the ordinary air supply on board ships. The oxidation increases rapidly with the ignition temperature of the coal, so that coal fires are found to occur most often on ships frequenting tropical climates. It may be roughly estimated that the absorbing power of a coal for oxygen is proportional to its power of taking up moisture. Prof. Bedsen said, in the discussion of Prof. Lewes's paper, that in heating coal dust at various temperatures up to 140°C . he had noticed that in some cases combustible gases were given off by the coal.

Cumulative evidence has been gathered by Sir Henry Roscoe and Mr. Scudder of the deposition of iron by burning water gas (which consists of carbon monoxide and hydrogen) upon the appurtenances of the burners and upon whatever objects or substances it comes in contact with. The amount of the deposit appears to increase with the time the gas has been stored in an iron cylinder, till at length the gas becomes smoky on burning. Upon passing some of this gas through a tube cooled with ice a few drops of a turbid liquid were obtained, which consisted chiefly of iron carbonyl. The turbidity disappeared on the addition of hydrochloric acid. It is thus evident that iron carbonyl is produced in the cold by the action of the carbon monoxide contained in the water gas upon the iron of the containing cylinder. A similar deposit of metallic iron has been found on the steatite burners from which ordinary coal gas is burned, and this points to the existence of iron carbonyl in our common illuminating gas. This conclusion is strengthened by the fact mentioned by Dr. Thorne that coal gas which has been compressed in iron cylinders and allowed to stand for some time is unfit for lantern projection on account of the deep stain of iron that is found upon the lime cylinders.

Dr. William Crookes described at the meeting of the British Association his experiments on the electrical evaporation of metals and alloys. Films of gold, silver, and platinum were thus obtained which could be peeled off from the glass on which they were deposited and were homogeneous. Different metals treated thus evaporate at different rates. A few, including aluminum and magnesium, seem to be non-volatile. It is thus possible, in the case of the gold aluminum alloy discovered by Prof. Roberts-Austen, to separate a large portion of the gold from the aluminum by electrical evaporation.

C. T. Heycock and E. H. Neville record the results of experiments in the application of Raoult's theorem—that the solution of any substance in any solvent lowers the freezing point of the solvent in a fixed degree—to the dissolution of metals in metals. Making tin the

solvent, they found the law the same as in Raoult's experiments with other substances, viz., that the fall in temperature of the solidifying point is directly proportional to the weight added, and that the fall in temperature is inversely as the atomic (or molecular) weight of the metal added. The experiments were tried with zinc, copper, silver, cadmium, lead, mercury, aluminum, and antimony dissolved in tin. The temperature rose with antimony, while aluminum produced a fall only half as great as the other elements.

The results of experiments on the crystallization of liquid films are published by Prof. Tito Martini, of Venice. He finds that a strong solution of sodium sulphate, when cooled to near its saturation point, possesses a viscous character that enables it to form a thin film on a metallic ring. On rapid evaporation, such a film crystallizes to an open lattice-work of minute crystals, which preserve their transparency for some time and then effloresce and crumble to powder. Even more satisfactory results were obtained with a transparent film of liquid sulphur; while experiments with ammonium chloride and sodium hyposulphite were unsuccessful.

The glow of phosphorus is ascribed by T. E. Thorpe to the "degraded combustion" of phosphorous oxide, which is formed whenever phosphorus is exposed to the air. When phosphorus is placed in oxygen, or in an atmosphere containing oxygen, under such conditions that it volatilizes, the phosphorus oxidizes, partly into phosphoric oxide and partly into phosphorous oxide. Ozone is formed, and this reacts upon the residual phosphorous vapor and the phosphorous oxide, with the production of the luminous effect to which the element owes its name. The glow itself is nothing but a slowly burning flame, having an extremely low temperature, caused by the chemical union of oxygen with the vapors of phosphorus and phosphorous oxide. By suitable means this glow can be gradually augmented till it passes by regular gradations into the active vigorous combustion which we ordinarily associate with flame. Many substances, in fact, may be caused to phosphoresce in the same way. Prof. Thorpe and A. E. Sutton, in a later paper, give a more minute description of phosphorous oxide, and show that it has a well-marked physiological effect. It is possible that the action attributed to phosphorus, especially as regards its influence on the glycogenic functions of the liver and on tissue change, is really due to this substance.

A research carried on by Dr. G. Gore with the aid of the voltaic balance shows that the decomposition of chlorine water by light may be divided into two essentially different parts, or periods, of chemical change. During the first period, a very great and gradual loss of voltaic energy occurs, attended by formation of hydrochloric, hydrochlorous, and chloric acids. During the second period a moderate and slow increase of voltaic energy takes place, accompanied by decomposition of the hydrochlorous and chloric acids, a further formation of hydrochloric acid, and the production of peroxide of hydrogen. Under the influence of prolonged sunlight the whole of the oxygen of the hydrochlorous and chloric acids united with water to form peroxide

of hydrogen, and the peroxide then combined with the whole of the hydrochloric acid to form a definite "solution compound," represented by the formula $2\text{HClH}_2\text{O}_2$. It is interesting to observe that suitably decomposed chlorine water or, in its stead, a mixture of $\text{HCl} + \text{HClO} + \text{HClO}_2$ in a proper proportion of water has the property of absorbing energy by exposure to light, very much like that possessed by the green leaves of plants.

New Substances.—A new antiseptic, said to possess certain decided advantages over those hitherto in use, has been brought to the attention of the French Academy of Medicine by Prof. Berlioz, of Grenoble. It is called microcidine, and is a compound of naphthol and soda. It is neither poisonous nor irritant, is twenty times as active as boric acid, and is much more soluble than thymol or carbolic acid. It is a grayish-white powder. A solution of three grammes to the litre of water is slightly colored, but it does not soil the hands or bandages. On account of its safety and strength it is claimed to be especially adapted to family use.

A new compound of iron and carbon monoxide, analogous to a nickel compound previously described by Messrs. Mond, Langer, and Quincke, has been obtained by Mr. Berthelot. To prepare it, carbon monoxide is led over iron in a very finely divided state, free from admixed oxide, at a temperature of 45°C , when it issues in the form of a gas. It is anticipated that by the aid of this volatile compound some furnace reactions, as yet little understood, may be elucidated. M. Berthelot is of the opinion that it may help to explain the formation of bubble flaws in manufactured iron, which have frequently led to unfortunate results. M. Berthelot also describes several new reactions of nickel-carbonyl—a liquid boiling at 46°C , which is so volatile that its vapor tension at 16°C is given as a quarter of an atmosphere. A drop placed upon a glass plate rapidly volatilizes, the portion last to disappear being for a few moments cooled down by the evaporation of the first portion to such an extent as to form beautiful little crystals. When suddenly heated to 70°C , it detonates, the detonating reaction being expressed by the equation $\text{Ni}(\text{CO})_4 = 2\text{CO}_2 + 2\text{C} + \text{Ni}$. When mixed with oxygen, simple agitation over mercury of the tube containing it brings about detonation. When oxygen is given slow access to the liquid oxide a solid substance is formed, which is green if the oxygen is moist and brownish yellow if it is dry. In contact with oil of vitriol the liquid compound, after appearing unaffected for a few moments, suddenly explodes with production of flame. With nitrous oxide, bright-blue fumes are produced which fill the vessel and eventually subside, forming a blue solid.

The tannin of chestnut wood has been studied from specimens prepared by himself from the beginning by Prof. Henry Trimble and found closely to resemble gallotannic acid in physical and chemical properties. It decomposes at 200°C into pyrogallallic and metagallic acids, giving an abundant crop of crystals of the former substance. Each of the three fractions in which it was obtained was estimated for sugar. The first was found to contain 10.48, the second 7.98, and the third 6.18 per cent. of glucose. An acetyl

derivative was prepared which in many respects resembled pentacetyl tannin.

Some very interesting properties and reactions of the chlorides of selenium are described by M. Chabré. Treating the tetrachloride as prepared by Berzelius for determination of vapor density, two molecules of the substance were dissociated at 360°C . into one molecule of Se_2Cl_2 and three molecules of chlorine. The subchloride, Se_2Cl_2 , is a much more stable body, and may be distilled unchanged at 360°C . Determinations of the density of its vapor yield values closely approximating to 7.95, the theoretical density of a molecule of the formula Se_2Cl_2 . Other interesting reactions were observed between selenium tetrachloride and benzene. When the two substances are brought together for reaction, the selenium tetrachloride is decomposed as when it is heated to 360°C ., the liberated chlorine reacting with the benzene to form several chlorobenzenes, and all the selenium remaining in the form of Se_2Cl_2 . When the benzene and SeCl_4 are brought together in the presence of aluminum chloride, on treating the mixture with water, separating and distilling the oil obtained, three distinct fractions may be collected. The first is monochlorobenzene: the second, at 227° – 228°C . under a reduced pressure, consists of phenyl selenide, a yellow oil of specific gravity 1.45 at 19.6°C . The third fraction, boiling between 245° and 250°C ., consists of another new compound, $\text{Se}_2(\text{C}_6\text{H}_5)_2\text{Cl}$. It is a red oil, of specific gravity 1.55 at 19.6°C . On allowing it to stand, it deposits yellow crystals of a compound of powerful odor, which may be obtained recrystallized from alcohol in long rhombic prisms. This substance is seleno-phenol, $\text{C}_6\text{H}_5\text{SeH}$, analogous to thiophenol and mercaptan, and in alcoholic solution readily reacts with salts of mercury and silver.

A new gaseous compound of nitrogen and hydrogen has been discovered by Dr. Theodore Curtius, having the composition HN_2 , and has been called by him, after its derivation, azoimide. The gas dissolves in water with great avidity, forming a solution which possesses strong acid properties, and dissolves many metals, such as zinc, copper, and iron, with evolution of hydrogen gas and formation of nitrides, the metal taking the place of the liberated hydrogen. In view of this property, the name azoimide is regarded as not sufficiently descriptive, hence Prof. Curtius proposes instead *Stickstoffwasserstoffsäure*, for which the nearest English equivalent would be hyrazoic acid. HN_2 possesses a fearfully penetrating odor, produces violent catarrh, and resembles hydrochloric acid in its affinity for water. Having isolated the new substance, Prof. Curtius and Herr Radenhausen have found it to be a clear, colorless, and very mobile liquid of phenomenally explosive nature. The liquid possesses the intolerable odor of the gas and the aqueous solution. It mixes readily with water and alcohol. It boils—when the operator is so fortunate as to carry out a distillation in safety—without decomposition at 37°C . But it explodes with extraordinary violence when suddenly heated or when touched with a hot body, and also sometimes without apparent provocation at the ordinary temperature, with production of a vivid blue flame.

The new peroxide of sulphur, SO_4 , discovered

by Traube, of Berlin, is obtained when solutions of sulphuric acid containing at least 40 per cent. of acid are subjected to electrolysis as a crystalline deposit upon the anode. It is not the anhydride of an acid, but a neutral oxide of a similar character to hydrogen peroxide. In water it parts with its oxygen readily and is reduced to ordinary sulphuric acid. It is stable in a moderately concentrated solution of sulphuric acid. It is but a weak oxidizing agent, but under certain circumstances acts as a powerful reducing agent.

Two gaseous fluorides of carbon, the tetrafluoride, CF_4 , and the difluoride, C_2F_4 , have been isolated by M. Moisson and M. Chabré. Fluorine directly attacks carbon with varying degrees of energy, according to the form in which the carbon is presented. Pure lampblack instantly becomes incandescent throughout. The action on the other forms of carbon is slower in proportion to their density, and in the harder varieties has to be assisted at first by the application of heat. The products of combination are generally gaseous mixtures of the two fluorides. The tetrafluoride is a colorless gas that liquefies under a pressure of five atmospheres at 10°C ., is absorbed and decomposed by an alcoholic solution of potash into potassium fluoride and carbonate, and is slightly soluble in water and more readily so in carbon tetrachloride, alcohol, and benzene. The most convenient way of preparing it depends on the reaction of silver fluoride and the vapor of carbon tetrachloride. A gas obtained by allowing fluorine to stream through red-hot carbon appears to be the C_2F_4 described by M. Chabré.

Fluoride of methyl, CH_3F , obtained by MM. Moisson and Merlaux by the action of methyl iodide on fluoride of silver, is a gas that liquefies at ordinary temperatures under a pressure of 32 atmospheres, is slightly soluble in water, and more readily so in methyl iodide or methyl alcohol, is very stable, and saponifies with great difficulty. It is also obtained, but of inferior purity, by the action of pentafluoride of phosphorus on methyl alcohol.

Another fluoride of methyl, isobutyl fluoride, $\text{C}_4\text{H}_9\text{F}$, prepared by the action of isobutyl iodide upon silver fluoride, is colorless, and in the liquid condition mobile, and boils at 16°C . The gas burns on ignition with deposition of carbon and the formation of clouds of hydrofluoric acid. It does not attack glass. M. Moisson has prepared by means of the reaction of silver fluoride with the iodides of the corresponding organic radicles the fluorides of methyl, ethyl, propyl, and butyl, and finds them in each case more stable than the analogous chlorine compounds.

Methylene fluoride, CH_2F_2 , prepared by M. Chabré, is a gas obtained by heating methylene chloride with silver fluoride, has a density as compared with air of 1.82, and is absorbed by alcoholic potash. It completes a series of which the chlorine, bromine, and iodine members have long been known. M. Chabré has found that hard Bohemian glass tubes may be used in these reactions with silver fluorides, for with them the corrosion is so insignificant that for practical purposes it need not be regarded.

Boron iodide, BI_3 , is prepared by M. Moisson by three methods, the most convenient of which

is by the action of hydriodic acid on amorphous boron. It appears in crystals, colored reddish purple by a small taint of free iodine, but, when purified, colorless, transparent, and somewhat mucous. Exposed to light, they emit iodine. They melt at 43°C . into a liquid which boils undecomposed at 210°C . They are exceedingly hygroscopic, and are decomposed by the moisture they attract, and are instantaneously decomposed in contact with water. Boron iodide burns readily when heated in air or oxygen.

When boron iodide is acted upon by phosphorus, boron phospho-di-iodide BPI_2 , is produced. It is a deep red amorphous powder; melts between 190° and 200°C .; when heated in a vacuum begins to volatilize about 170° , the vapor condensing in the cooler part of the tube in red crystals; is very hygroscopic and rapidly decomposed by water; burns spontaneously in chlorine; and inflames when slightly warmed in oxygen.

A second phospho-iodide of boron is represented by the formula BPI , and is formed by the action of sodium or magnesium on a solution of the di-iodide just described, or by heating that substance to 160°C . in a current of hydrogen. It is obtained as a bright-red powder, somewhat hygroscopic. It volatilizes in a vacuum without fusion at about 210°C ., and the vapor condenses when cooled into orange-colored crystals. Heated to redness, it decomposes into free iodine and phosphide of boron, BP . By the continued action of dry hydrogen upon the heated compound, the iodide and a portion of the phosphorus are removed and a new phosphide of boron, B_2P_3 , is obtained.

A specimen of iron-carbon-oxide was exhibited at the British Association, obtained by Messrs. Mond and Langer as an amber-colored liquid, which, on standing, deposits tabular crystals of a darker color and solidifies below -21°C . to a mass of needle-shaped crystals. It boils at 102°C ., but leaves a small quantity of green-colored oil behind. Several analyses and vapor-density determinations have been made, but it is not yet certain whether a pure substance has been obtained or a mixture of several iron carbonyls.

Specimens of nickel-carbon-oxide and metallic nickel obtained from it were exhibited by Ludwig Mond at the meeting of the British Association, and an account was given of the discovery and properties of the compound. Chemically, nickel carbonyl is very inactive, and experiments made to introduce the carbonyl group by its means into organic substances had been uniformly unsuccessful. Experiments were described that had for their object the direct extraction of nickel from its ores by means of carbon monoxide. As long as the nickel was combined with arsenic or sulphur the process was successful on a laboratory scale. The ore, matte, or speiss was calcined, reduced by water gas at 450° , cooled down to a suitable temperature, and treated with carbon monoxide in a suitable apparatus. On exposing a heated surface to the gas containing nickel-carbon-oxide, it is possible to produce direct from such gas articles of solid nickel or goods plated with nickel, resembling in every way those obtained by galvanic deposition of metals, and reproducing with the same exactitude and fineness any design upon such articles. This result can

also be obtained by immersing heated articles in a solution of nickel-carbon-oxide in such solvents as benzol, petroleum, tar oils, etc., or by applying such solution to the heated articles with the brush or otherwise.

Repeating the work of Messrs. Mond, Langer, and Quinke on the remarkable compound of nickel and carbon monoxide, $\text{Ni}(\text{CO})_4$, M. Hanriot has found it a highly poisonous substance, far more deadly than carbon monoxide itself. Blood poisoned by means of it exhibits the characteristic absorption spectrum of blood containing carbon monoxide. The oxygen of the air diminishes somewhat the poisonous action of the compound, inasmuch as it promotes dissociation into metallic nickel and carbon monoxide.

Mr. Waldron Shapleigh exhibited at a recent meeting of the Franklin Institute, Philadelphia, some forty specimens of salts of what are called the rare earths, with minerals from which they are obtained, viz., samarskite, zircon crystals, and monazite sand from North Carolina, monazite sand from Brazil, gadolinite from Texas, and allanite from Virginia. This was the first time the salts of praseodymium and neodymium have been shown and probably separated in this country; the separation of these elements is long and tedious. The specimens shown had undergone nearly 400 fractional distillations, and had been in a state of constant preparation since early in 1888. Tons of cerite and monazite sand had been used, and tons of the salts of cerium and lanthanum obtained, but the yield of praseodymium was only a few kilogrammes. The percentage of neodymium was much higher. Zirconium, lanthanum, and cerium should no longer be classed among rare earths, as hundreds of tons of ores from which they are obtained have been located in North Carolina, and there seems no end to the deposits of monazite sand, one of the richest ores, and containing most of the rare earths. In Brazil it does not have to be mined, as it is in the form of river sand. In North Carolina it is found in washing for gold.

A new crystalline carbohydrate, of the composition $\text{C}_{12}\text{H}_{22}\text{O}_{11}$, called stachyose, has been extracted by Drs. Von Planta and Schulze from the bulbs of *Stachys tuberosa*. The crystals and their aqueous solution possess a faint, sweet, sugar-like taste, and the solution in water, which is of neutral reaction, rotates the plane of polarization strongly to the right. From its properties it is assigned to the group of carbohydrates called by Prof. Tollens crystallizable polysaccharides, in which are included raffinose or mellitose, gentianose, and lactosine. Stachyose resembles lactosine very closely, especially in the formation of galactose on inversion, but is distinguished from it by its lower dextro-rotatory power.

An important series of new compounds—the ketazines—has been obtained by Prof. Curtius, resulting from the action of hydrazine hydrate upon ketones. The simplest of these, which is obtained by the action of hydrazine hydrate upon acetone, is a clear liquid possessing a sharp odor somewhat resembling that of alkaloid coniine. By employing other ketones, a large number of the ketazines have been prepared. Those containing fatty radicles are liquids, and those containing aromatic groups are solids. The lowest members only dissolve in

water, with a solubility rapidly decreasing with increase of carbon atoms. Acids decompose them in the cold, with assimilation of water, into their constituents, but they are comparatively stable toward alkalies. Light exerts a decomposing action upon them; specimens placed in bright sunshine rapidly become yellow. Reducing agents are without action upon them, and they appear further to be incapable of reducing either Fehling's solution or (except after long boiling) ammoniacal solutions of silver salts.

New Processes.—India-rubber is usually vulcanized by heating it with sulphur until chemical combination takes place. A different method is pursued in making cloth for waterproof garments. The cloth is washed with a solution of chloride of sulphur in bisulphide of carbon, when the fabric is heated to evaporate away the excess of those substances. The chemical action in the process is supposed to be represented by a combination of the sulphur with the India-rubber, producing vulcanization, and of the chlorine with the hydrogen to produce hydrochloric acid. This reaction, Mr. William Thomson believes, is not the correct one, while the reverse is probably more in accordance with the facts, viz., that the chlorine of the sulphur chloride combines with the India-rubber to produce vulcanization, while the sulphur is left free or only partially in combination with the rubber. Mr. Thomson supports this view by citing certain results of his own experiments. A substitute for India-rubber which is much used is produced by acting on vegetable oils with the solution of chloride of sulphur in bisulphide of carbon. The oil becomes converted into a solid substance somewhat resembling India-rubber, but more brittle. Mr. Thomson's analyses of this substance have invariably shown it to contain a much greater proportion of chlorine than of sulphur. The process is therefore probably a vulcanization by chlorine rather than by sulphur. The substitutes contain considerable quantities of oily matters soluble in water, which have also been found to be chlorine and sulphur compounds of the oils. These oily matters are supposed by some manufacturers to be injurious to the rubber, but the author has found that it rather acts as a preservative of it. Copper salts exert an injurious effect on India-rubber, and cloth that has been dyed with them is destructive to a coating which may be placed upon it.

The authors William Thomson and Frederick Lewis continued their experiments on the action of copper and other metals and their salts on India-rubber. A sheet of India-rubber was spread on paper and vulcanized. The substances—filings of metals or solutions of salts—were placed upon small squares of the rubber and exposed to a heat of 140° F. for ten days, when the rubber on each square was tested. Copper was found to have a destructive effect far beyond that of the other metals. The following metals were destructive in the order in which they are mentioned: Platinum, palladium, aluminum, and lead. Magnesium, zinc, cadmium, cobalt, nickel, iron, chromium, tin, arsenic, antimony, bismuth, silver, and gold had no effect upon the rubber. Of salts, besides those of copper, arsenic iodide, silver nitrate,

strontium, chlorate, vanadium chloride, red and black oxides of manganese, and bismuth chloride destroyed the rubber; ferrous nitrate, sodium nitrite, uranium nitrate, and ammonium vanadate considerably damaged its elasticity; lead chromate, ferrous sulphate, zinc acetate and chloride, tin peroxides and perchloride, chromic acid, and lead borate only slightly damaged it. Copper salts were found to damage it even in minute quantities and in proportion to the quantity of copper present. Experiments on the action of different cloths and cloths of different colors likewise demonstrated the injurious effect of copper. Of acids of a strength to neutralize equal parts of a 10-per-cent. solution of anhydrous sodium carbonate, nitric acid was destructive, while hydrochloric, sulphuric, chromic, citric, and tartaric acids were not; but rubber soaked in the strongest sulphuric-acid solution containing 10 per cent. of acid was destroyed on being heated to 212° F. Peroxide of hydrogen appeared to be neutral in effect, while ozone had been previously found to be destructive. The opinion of manufacturers that over-mastication of India-rubber is injurious was not borne out by the experiments.

Having found that gold can be completely precipitated by the electric current from its double cyanides, Edgar F. Smith and F. Muir attempted to decide what metals can be separated from gold in this manner. Their experiments were satisfactorily successful in the separation of gold from copper, from cobalt, from nickel, from zinc, and from platinum, and of silver and mercury from platinum. With cadmium the precipitate was never free from platinum. The electrolytic separation of zinc from mercury, cadmium, and silver in a solution of potassium cyanide was effected without difficulty.

To detect contamination of water with sewage, Peter Griess dilutes paradiazobenzol sulphuric acid with 100 parts of water and adds a little soda lye in excess. The solution must be used when fresh, as it soon becomes colored spontaneously. If when it is introduced into the water no change of color takes place within five minutes, the total absence of organic secretions or products of decomposition may be inferred. A yellow color shows the presence of such matter in proportions corresponding with its tone. With this test the author has made very delicate determinations.

A method of making phosphorous oxide by burning phosphorus in the air is described by Prof. T. E. Thorpe and A. E. Tutton. Pure phosphorous oxide crystallizes in thin monoclinic prisms, melts at 22.5°, solidifies at 21°, and boils unchanged in an atmosphere of nitrogen or carbon dioxide at 173°. When heated at 300° it decomposes, and is converted into phosphorus and phosphorous tetroxide. It is readily acted on by light and in bright sunshine turns yellow and eventually dark red. Cold water, contrary to the usual statement of the text-books, has very little action upon it. Hot water acts on it with explosive violence, and the red sub-oxide, phosphoric acid, and phosphoretted hydrogen result. On exposure to the air or oxygen it spontaneously oxidizes to phosphorous pentoxide, with a faint luminous glow if the pressure is diminished. It has well-

marked physiological effects, and some of the action heretofore attributed to phosphorus is probably due to it. So also is the smell that usually accompanies phosphorus, whose vapor as such is believed by Schönbein to be odorless.

A process for extracting oil patented by W. T. Forbes consists in treating oleaginous material with a solvent, then expelling the dissolved oil and solvent from the mass by centrifugal force; introducing steam to vaporize any of the solvent remaining in the residuum; and drying the same by applying centrifugal force. All the different steps of the process are applied while the material operated upon is contained in the revolving chamber of a centrifugal machine.

In his colorimetric method for determining tannin in barks, S. J. Hinsdale prepares a ferric liquor by adding solution of ferric chloride to solution of potassium ferrocyanide. A tannic solution is then made. The substance in which the tannin is to be determined is brought in contact with a little boiling water, and the solution is diluted with cold water. Six flat-bottomed glasses are set upon white paper, and in the first are put 5 drops of the solution to be titrated; into the others are put, respectively, 4, 5, 6, 7, and 8 drops of the solution of tannin. To each are then added 5 c. c. of the ferric liquor. After the lapse of 3 minutes the experimenter observes the tint of the tannin solution which corresponds most closely with the solution under examination.

For the rapid estimation of arsenic in ores, F. W. Boam uses a modification of the "Uranium acetate method," which is applicable to all ores containing arsenic, and which are attacked by HNO_3 . The author has tested it against other methods, and finds it superior to all for rapidity and accuracy.

Atomic Weights.—The Committee of Revision and Publication of the Pharmacopœia of the United States has published a table of atomic weights, prepared, at its request, by Prof. F. W. Clarke, upon the basis of the most recent data and his latest computations. The committee regards it as highly desirable for this table to be adopted and uniformly followed by chemists in general, at least for practical purposes, till it is superseded by a revised edition; and it requests that all calculations and analytical data which are to be given for its use or cognizance be based upon the values in the table. The basis to which all the atomic weights in the table are referred is $\text{O} = 16$.

In their estimation of the atomic weight of magnesium, W. M. Burton and L. D. Vorce employed, in order to obtain magnesium of exceptional purity, a method similar to that described by Dr. H. N. Morse for the preparation of pure zinc by distillation. Weighed portions of this pure metal were converted into the nitrate, and this was ignited to the oxide. Thus the errors arising from the presence of impurities and those involved in determining the impurities and correcting them are believed by the authors to have been avoided. The atomic weight given by this process was 24.211. Perfect crystals of magnesium were obtained during the experiments and made objects of study. From them magnesium appears to be more closely related to beryllium in its crystal form than to zinc.

Prof. Seubert's determinations of the atomic

weight of osmium have been completed, and give a final mean value of 190.3. The settlement of this question is regarded as very important, inasmuch as it removes the last outstanding exception to the periodic generalization. On the supposition that the chemical and physical properties of the elements are functions of the atomic weight, the atomic weights of the four metals of the gold-platinum group should increase from that of osmium up to that of gold. The accepted atomic weights of these metals previous to 1878 stood, however, in the reverse order. At that time Seubert took up the problem. The atomic weights of the several substances were gradually corrected, and they now stand: Osmium, 190.3; iridium, 192.5; platinum, 194.3; and gold, 196.7—an order fully in accord with the gradation of chemical and physical properties of the substances.

The atomic weight of rhodium has been re-determined by Prof. Seubert and Dr. Kobbé, of the University of Tübingen, with an accuracy which is regarded as leaving no doubt that the value of this constant has been arrived at within the ordinary limits of inevitable experimental error. The experiment was made by reducing the heated ammoniacal salt $\text{Rh}_2(\text{NH}_3)_4\text{Cl}_6$ in a current of pure hydrogen to metallic rhodium. The mean of ten experiments gave $\text{O} = 15.96$, $\text{Rh} 102.7$; or $\text{O} = 16.103$. Rhodium therefore retains the place in the periodical system marked out for it by its chemical behavior, between ruthenium, 101.4, and palladium, 106.3, and in the same vertical group as its analogue iridium.

Prof. F. P. Venable advocates making $\text{O} = 16$ the standard of reference for the atomic weights. Hydrogen, although its small atomic weight makes it the most convenient unit, does not furnish a convenient standard, because the ratio of the atomic weight of only a few of the elements can be compared directly with it. While the exact ratio of oxygen to hydrogen (usually written $\text{O} = 15.96$) would furnish the most suitable standard were it fixedly determined, its selection would not be wise, because it is still liable to correction. Since extreme exactness is unattainable and a compromise is necessary, the selection suggested offers the solution freest from objection. "The atomic weights are but relative numbers. To be in any respect constants, they must be relative to but one single element. With but few exceptions, the ratio to oxygen can be determined. In revision of atomic weights, then, this should receive the chief attention."

The determination of the atomic weight of lanthanum by Dr. Brauner, of Prague, is contradictory to Winkler's hypothesis that the element should be regarded as tetravalent, with an atomic weight of 180, instead of being, as has hitherto been accepted, trivalent, with an atomic weight of 138.5. Dr. Brauner reasoned, from the determinations of the specific heat of lanthanum, that the old figure was correct, and then proceeded to redetermine the atomic weight. His experimental method consisted in converting known weights of the oxide into sulphate. His value obtained for the atomic weight of the element is 138.2, which keeps it in its old place in the trivalent group of the periodic system marked off for it by its basic properties.

The atomic weight of beryllium has been de-

terminated by Drs. Krüss and Moraht by means of what is probably the purest oxide ever prepared. The value obtained, 9.05, is very nearly a whole number, being nearer to 9 than any value ever previously obtained. It therefore appears that the whole number 9 is more nearly approached the purer the materials are with which the experiment is performed—a result that has an important bearing in favor of Prout's hypothesis.

The atomic weight of copper has been determined by T. W. Richards from the analysis of cupric bromide, and found—that of silver being 108—to be 63.644.

Relations have been detected by M. Prud'homme between the shades obtained by the use of mordants in dyeing and the atomic weights of the substances. The shades appear to undergo continuous variations, which appear very distinct by the side of Mendeleef's classification of the elements in natural groups and periodic series. From numerous experiments made with some thirty-six elements, the author concludes that in each of Mendeleef's groups, if we consider the terms of the periods of the even or odd rank, there is a continuous variation in a determined direction from blue to red or from red to blue. The author continues his paper with more specific accounts of the variations.

Chemical Analysis.—Prof. Roberts-Austen expressed an apprehension in his address at the chemical section of the British Association that the wide range of study upon which a metallurgical student is rightly expected to enter may lead to diminution in the time devoted to analytical chemistry, and this most serious question, he said, should be pressed upon the attention of all who are responsible for the training of our future chemists. There can be no question that sufficient importance is not attached to the estimation of "traces," an analysis being considered satisfactory if the constituents found add up to 99.9, although a knowledge as to what elements represent the missing 0.1 may be more useful in affording an explanation of the defects in a material than all the rest of the analysis. This matter is of growing interest to practical men, and may explain their marked preference for chemists who have been trained in works to those who have been educated in a college laboratory.

It has been found by Prof. E. Shulze, of Zurich, and W. Maxwell, of Harvard College, that in the estimation of fatty matters in vegetable organisms the substituted glycerides do not become wholly separated by extraction with ether even in a great duration of time. If the materials which had been already extracted with ether were still further extracted with absolute alcohol, another portion of substituted glycerides was obtained, which in most instances was greater than the amount separated by the ether. The process of the alcohol extraction consisted in merely extracting the material already treated with ether and evaporating off the alcohol, and re-extracting the alcohol extract residue with ether. The reason for taking up the lecithins out of the alcohol extract was that it had been observed that those lecithins which were originally insoluble in ether became soluble in that menstruum when previously acted upon by alco-

hol. In cotton seed the proportion of lecithin to the total fatty bodies is very small, yet about 50 per cent. of those substituted glycerides were left in the material after extraction with ether for a period of fifteen hours. In certain other varieties of seeds, such as the legumes, beans, peas, vetches, etc., the total ether and alcohol extracts were composed of lecithins varying from 25 to 45 per cent.

The method of J. Weirich for detecting coloring matters fraudulently added to wine is founded on the action of air and light upon the coloring matters of wine spread out in an extremely thin layer. The wine is applied with a brush upon a piece of paper of good quality which is not pervious. It is kept for an instant in contact with the paper, which is then drained off and let dry. The coloring matters of wine give the paper a different tone from those of the coloring matters—vegetable, animal, or artificial—which serve for the sophistication of wines. The natural colors of wine and vegetable colors are transformed upon paper, each according to its nature. The artificial colors are transformed either very slightly or not at all. The process of A. Pagnoul depends on the property of soap lyes to destroy the natural coloring matter of wines without giving them the greenish tint communicated by other alkaline solutions and without affecting strange colors. Foreign coloring matters which are not decomposed by alkalies at an ordinary temperature (like safranin, eosin, etc.), or which they turn to a violet (like the tropeolins and cochineal), are detected by L. Sostigni's method by shaking the wine for five minutes with a solution of potassa one tenth its volume, and pouring the liquid into a filter of parchment paper in contact externally with water. After some hours a yellow liquid containing the oxidation products of the tannin is diffused. The coloring matters foreign to wine are fixed upon the parchment paper with their own colors. Natural wines color the paper yellow.

The reaction with nitric solution of ammonium molybdate is applied by G. Denigès for distinguishing arsenical spots from those of antimony. The suspected spots are mixed with a few drops of nitric acid; they dissolve instantly, whether they consist of antimony or arsenic. Heat is applied for a few moments and a few drops of ammonium molybdate in a nitric solution are applied. When arsenic is present, even if only in traces, a yellow precipitate soon appears, showing the forms of crystals—fine yellow stars with triangular branches, generally six in number, arranged in rectangular planes according to the axes of a cube—characteristic of ammonium arsenio-molybdate. Antimony gives nothing analogous.

G. Vortmann shows that in the determination of metals by electrolysis of their solutions it is essential, first, that the metal be separated out quantitatively, as such or in the state of a known compound; and, second, that the precipitate detained forms a uniform coating on the platinum capsule used as an electrode and adheres so firmly that no loss takes place on rinsing with water and alcohol, and that it undergoes no change during drying. Among the metals that have been hitherto determined electrolytically, iron,

cobalt, nickel, zinc, cadmium, bismuth, copper, mercury, silver, gold, tin, platinum, and antimony have been separated as metals, and manganese and lead as peroxides. Some of these metals present difficulties in electrolysis, because they form a uniform adhesive stratum only if present in small quantities. A uniform adhesive coating may be obtained by adding such metals as are apt to be deposited as a spongy mass, for which purpose mercury is convenient. By this method Vortmann has made a series of very interesting electrolyses, which are described in detail in his paper in the *Berichte der Deutschen Chemischen Gesellschaft*.

The asbestos method of milk analysis as described by Thomas Macfarlane to the Royal Society of Canada, in May, 1887, has proved so satisfactory at the Canada Experimental Farm, both as to accuracy and rapidity, that it has been adopted in the laboratory of the farm. Mr. Frank T. Shutt gives accounts of experiments, contrasting this process with others in which the total solids are estimated by evaporation in platinum dishes, and in which the fat is determined by weighing in flasks after exhaustion of the milk solids in a Soxhlet tube. In the former experiments the solids obtained were higher by the platinum method, but are believed to have been too high. It is observed that while the milk solids in the asbestos method are always white, those in the platinum method are more or less brown, showing that a change takes place in the latter process which does not ensue by the asbestos method. In the second series of experiments the results obtained by direct weighing were slightly the higher of the two. If it be granted that the total solids and fat can be accurately determined by this method, Mr. Shutt's tables show that the results are not variable, and that when duplicates are performed no large differences will have to be averaged in order to arrive at the truth.

It is remarked by Mr. T. W. Hogg that the method of determining iron in its alloys by decomposing with dilute hydrochloric or sulphuric acid, and oxidizing by means of a standard solution of bichromate of potash, is liable to error when copper is present. In such case the author advises solution in dilute hydrochloric acid, adding potassic chlorate, and boiling to expel chlorine compounds. The iron may then be reduced by means of a solution of sodium sulphite, and, after boiling away the excess of sodium sulphite, adding the bichromate in the usual manner.

For detecting metallic silver in the presence of lead, Alexander Johnstone suggests boiling the product obtained by heating the mineral with fusion mixture in nitric acid; neutralizing the solution with sodium carbonate, but leaving it slightly acid; and inserting in the prepared solution a strip of copper and one of zinc. The lead of the solution is deposited on the zinc, and most of the silver on the copper. This is then tested. If no silver is present in the solution, the copper foil when placed in it is hardly coated.

The novelty in Herr J. Wiborgh's volumetric method of estimating carbon in iron consists in the direct measurement of the carbonic acid produced from the oxidation of the carbon in the sample under investigation instead of weighing

it as potassium carbonate, as is usually done. This simplifies the operation, allows the analysis to be quickly performed, and admits of greater accuracy when working with small samples.

For the complete separation of copper from bismuth, instead of the inconvenient process of fusion with bismuth sulphide, Edward Matthey recommends as an effective method to fuse the alloy, and at a temperature a little above its melting point to add a small proportion of sodium monosulphide.

Hydriodic acid has been found by F. A. Gooch and E. W. Danner a satisfactory substitute in the separation of antimony from arsenic for the ferrous chloride of Fischer's original method and for the ferrous sulphate of the modification of Classen and Ludwig. In these methods the chlorides are reduced by means of ferrous chloride or ferrous sulphate and ammonio-ferrous sulphate, and the arsenic is volatilized by repeated distillations of the mixture with hydrochloric acid.

Chemical Synthesis.—An effort toward the solution of the complex problem of the synthesis of the proteids has been made by P. Schützen. The author had determined in previous researches the terms resulting from the decomposition of the proteic matters by hydration under the influence of bases. The question arose whether, in the inverse problem, the amides and amido-compounds of a relatively simple constitution produced in the decomposition could be recombined so as to form complex bodies approaching the proteic matters in constitution and the totality of their chemical characters. The author solved this question in the affirmative, and succeeded, by eliminating water and combining the ultimate and crystallizable products derived from the decomposition of albumen and fibrin under the influence of baryta, in forming a nitrogenous compound presenting great analogy with the peptones, which may rank in the class of the proteic compounds.

The mineral hornblende has been artificially reproduced in well-formed crystals by M. Kronschoff. His process essentially consists in digesting together in the presence of water, for a long period of time, in a vacuum, the various oxides contained in natural hornblende amphiboles. These ingredients were aqueous solutions of silica, alumina, ferric oxide (all dialyzed), pure ferrous hydrate, lime water, hydrate of magnesia, and caustic soda and potash, in suitable proportions. The mixture, which presented the appearance of a gelatinous mud, was heated in exhausted and sealed flasks to a temperature of 550° C. for three months. At the end of this time the mud had become much darker in color, with numerous brilliant little crystals, almost black, distributed through it. These, on examination, were found to consist of flattened prisms identical in character with hornblende.

The compound $3\text{Ti}_2\text{N}_3 + \text{TiCy}_3$, which is often found in iron furnaces on smelting titaniferous ores, may be formed, according to C. Ludeking, of St. Louis, in the inner flame of a Bunsen burner, which is made slightly luminous by a proper regulation of the supply of air. On account of the characteristic appearance of this compound, very small quantities of titanic acid can be quickly detected. The substance in question is dissolved with a little sodium carbonate

in the loop of a thin platinum cone, and all the sodium is volatilized in the inner flame. If titanium is present, the coppery-red compound represented by the formula is found, and may be easily recognized on the platinum wire. Inversely the reaction serves for the detection of cyanogen in flames.

Indigocarmin, the commercially important disulphonic acid of indigo, has been synthesized by Dr. Heymann at Elberfeld. The reaction consists merely in acting with excess of fuming sulphuric acid upon phenyl glycolic acid, the aniline derivative of glycolic acid. The tints obtained with this product are much superior in beauty and clearness, because of its greater purity, to those obtained with even the better kinds of commercial indigocarmin. Sixty per cent. of the theoretical yield of the process has been obtained in Dr. Heymann's experiments.

The mineral daubreelite, or schreibersite, has been artificially reproduced by M. Stanislas Meunier by treating at a red heat with sulphuretted hydrogen (1) a mixture in the proper proportions of ferrous chloride and chromic chloride; (2) very finely powdered natural chrome iron ore; and (3) an alloy of iron and chromium. The last method yields the best result.

A. Baur obtains artificial musk by the nitration of isobutyltoluene. It is a solid substance, crystallizing in small white laminae, which have the pure odor of musk in extraordinary intensity. The process has been patented and sold to certain perfumers in Mulhouse.

Assuming that methyl alcohol, H_2COH , is the primordial alcohol, from which the primary, secondary, and tertiary alcohols are derived by the respective substitution of carbon radicals C_nH_x for one, two, or three atoms of hydrogen, Paul Henry has effected the direct synthesis of the primary alcohols by the reaction of the organo-zinc compounds upon the simple monoclinic methylic ethers.

Agricultural Chemistry.—The experiments at Rothamstead since 1889 on the fixation of free nitrogen by papilionaceous plants have been made on annual plants and on plants of longer life. In the first experiments the results at mature growth, or when the plants were nearly ripe, were observed. It was found that without microbe seeding of the soil there was neither formation of nodules on the roots nor assimilation of free nitrogen. In another series of experiments the roots and nodules were examined at different stages of growth. The general results pointed to the conclusion that in the case of the annual when the seed is formed and the plant is more or less exhausted both the actual amount of nitrogen in the nodules and its percentage in the dry substance are greatly reduced, but that with the plant of longer life, although the earlier-formed nodules become exhausted, others are formed, making provision for future growth. The facts at command did not favor the conclusion that under the influence of the symbiosis the higher plant itself was enabled to fix the free nitrogen of the air by its leaves. Nor did the evidence point to the conclusion that the nodule-bacteria became distributed through the soil and there fixed free nitrogen, the compounds of nitrogen so produced being taken up by the higher plant. It seemed more consistent with

experimental results and with general ideas to suppose that the nodule-bacteria fixed free nitrogen within the plant, and that the higher plant absorbed the nitrogenous compounds produced. In other words, there was no evidence that the chlorophyllous plant itself fixed free nitrogen, or that the fixation takes place within the soil, but it was more probable that the lower organisms fix the free nitrogen. If this should eventually be established, we have to recognize a new power of living organisms—that of assimilating an elementary substance. But this would only be an extension of the fact that lower organisms are capable of performing assimilation, a work which the higher can not accomplish; while it would be a further instance of lower organisms serving the higher.

According to the researches of MM. Berthelot and André, plants take up sulphur incessantly until they flower, the relative proportion of the element being greater by one third during the first period of vegetation. The sulphur in the state of organic compounds reaches its maximum during inflorescence, and then declines. It seems as if the sulphates derived from the soil were reduced at first and then regenerated after flowering in consequence of an internal oxidation. But this supposes that the sulphur is entirely derived from the soil in the state of sulphates, while a portion may be derived directly from organic sulphur compounds that exist in plenty in the soil. The latter opinion is supported by the fact that organic sulphur is found in quantity in the roots, except at the beginning of flowering. Toward the end of flowering it abounds at once in the roots and stems.

The occasional existence of copper in cereals, peas, beans, etc., as a natural constituent long known, has been brought under the attention of Mr. William Johnstone in a manner that necessitated the examination of a large number of samples of wheat and barley. Fifteen per cent. of the samples were found to contain greater or less proportions of copper. The author supposes that it is derived from the sulphate of copper with which the ground is dressed for the protection of the seed from vermin.

For the estimation of nitrogen in such fertilizing substances as dried blood, shoddy, fleshings, soot, etc., Vincent Edwards recommends as an accurate and reliable method, and yet not too costly, a modification of Kjeldahl's process, particularly in the apparatus.

Percy T. and Grace C. Frankland have been engaged during the last three years in endeavoring to isolate the nitrifying organisms. Nitrification having been in the first instance induced in a particular ammoniacal solution, was carried on through 24 generations. Transferred to gelatin, the organism either failed to grow there, or growing, refused to nitrify after being passed through the medium. Experiments were then made in isolating the organism by the dilution method; and, after a large number of experiments, the authors obtained an attenuation of about one millionth of the original nitrifying solution employed, which nitrified, but on inoculation with gelatin-peptone refused to grow, and was seen under the microscope to consist of numerous characteristic bacilli hardly longer than broad, which may be described as bacillo-

cocci. Although the bacillo-coccus obstinately refuses to grow in gelatin when inoculated from these dilute media, it produces a characteristic though slow growth in broth. Nitrification was also induced in ammoniacal solutions by inoculating from such broth cultivations.

Chemistry of Foods.—When milk is sterilized by heating in loosely plugged flasks immersed in a steam bath, surface evaporation does not occur, and little or no pellicle is formed on the surface. Dr. A. R. Leeds has found that the differences in the behavior of raw, boiled, and sterilized milk when treated with dilute acid were not as striking as had been anticipated. But when ordinary raw milk was diluted with 20 times its volume of water and the precipitate was filtered off, the dilute acid filtrate gave on boiling an additional precipitate. Milk which had been heated for an hour (sterilized) or boiled for half an hour behaved differently. It gave a larger amount of precipitate with dilute acid, but yielded no further precipitate on boiling the filtrate. Plate cultures of Swiss condensed milk showed it to be entirely sterile, no bacterial colonies appearing in it when the plates were kept several days. Polariscopic determinations were made of the amount of milk-sugar present after each heating; the raw milk contained 4.18 per cent. No change could be perceived till the end of six hours in the steam bath, when the sterilized milk had become strongly brownish yellow, like an infusion of coffee to which a large amount of milk had been added, and the percentage of milk-sugar had fallen to 3.94. It then steadily diminished until at the end of forty-eight hours the milk-sugar had disappeared. The process of heating to prepare the sterilized condensed milks of commerce is not carried far enough to lower perceptibly their percentage of milk-sugar. This is shown by an analysis of both an American and a Swiss preparation, concerning which it is remarked that the composition of the two milks is surprisingly similar when we consider that the cattle fed on the Swiss Alps and in the Western State from which the American sample came were of different breed, and that their feeding, care, etc., were also widely diverse. Condensed milk properly prepared is, in fact, sterilized milk in a concentrated, convenient, and portable form. It is important to compare it with sterilized milk, prepared and sold in sterilized flasks, but without condensation. Samples of a particular brand of sterilized milk obtained in midsummer exhibited a separation or fats in masses of considerable size. By moderate warming and shaking this fat could be partially diffused through the milk, but not in such a manner as to bring the sterilized milk back to the appearance of ordinary milk, or of milk on which the cream has risen on standing and then has been shaken up again with the milk. Samples obtained in December did not exhibit this appearance, but resembled rich milk; and the separation of the fat in the former case was probably due to the samples having been kept for some time in the laboratory. The most striking feature of the samples was their high percentage of solids. The author is of the opinion that the period of one hour usually recommended for keeping milk at the tempera-

ture of boiling water in order to sterilize it is excessive. Experiments have shown that in the majority of cases the sterilization is complete in half an hour or less time.

An albumose and a ptomaine have been isolated by E. A. von Schweinitz from the products severally of the germs of the hog cholera and the swine plague. The names *sucholotoxin* and *sucholoalbumin* have been given to the substances derived from the hog-cholera cultures, and *suplagoatoxin* and *suplagoalbumin* to those derived from the swine-plague cultures. A subcutaneous injection of a small quantity of these substances is sufficient to produce death in guinea-pigs in from twenty-four to forty-eight hours. If, however, a much smaller quantity is injected and the injection is repeated a number of times, the animals are protected from the corresponding disease when communicated by direct inoculation with the germ. The author and Dr. W. H. Gray have also produced great resistance and subsequently immunity from diphtheria in guinea-pigs by first treating them with the chemical products obtained from cultures with the germ.

Two persons in Mansfield, Ohio, having been made sick by eating pie made from canned pumpkin, the attending physician pronounced the case one of lead poisoning. A specimen of the canned pumpkin was examined by Prof. H. A. Weber, who found that it contained an amount of stannous salts equivalent to 6.4 maximum and 5.4 minimum doses of stannous chloride per pound. Another can from the same lot contained tin salts equivalent to 7 maximum and 56 minimum doses of stannous chloride per pound. The unexpected large amount of tin salts in such an insipid article as canned pumpkin, and the ill effects of the consumption of the viand, suggested the advisability of extending the investigation to other canned goods in common use. A line of articles was purchased in open market as sold to consumers, no pains being taken to procure old samples. The collection embraced fruits, vegetables, fish, and condensed milk. Except the condensed milk, every article examined was contaminated with salts of tin. In most cases the amount present was so large that there could be no doubt of danger to health from the consumption of the food.

The experiments of Dr. J. H. Garrett as described in his book on "The Action of Water on Lead," show that if a water is fairly pure it will act upon lead or dissolve it to a certain extent, even if no acid is present. The author observed that distilled waters that are neutral or even very faintly alkaline can act upon lead. The lead, it seems, derives the oxygen necessary for its corrosion, not so much from the free oxygen or any other oxygenous gas existing in solution in the water, as from nitrates and nitrites present. The quantity requisite for action, at least in the absence of any alkaline-earthly carbonates, is extremely small. Its origin may be sought "in the decomposition of the organic matter which such waters invariably contain."

A new method proposed by Raoul Brullé for detecting olive oil and seed oil in natural butters and oleomargarine depends on the changes of color produced by contact with solution of silver nitrate in ethylic alcohol. Olive oils sooner or later take a fine green color, which is lighter in

the superior qualities; pure cotton-seed oil is turned black; oil of earth-nuts (*Arachis*) takes a red-brown color and finally turns green, losing its transparency; oil of sesame takes a deep-red color and remains reddish; oil of colza takes yellowish-green colors and becomes turbid; natural butter preserves its natural color; oleo-margarine becomes a brick red, and this may be detected even in samples containing as little as 5 per cent. of margarine.

A discussion in the American Chemical Society at its annual meeting for 1891 resulted in the conclusion that carbonate of ammonia is the best substance of the kind for use in making bread and in baking-powders. Ammonia, it was said, makes the gluten of the flour more soluble, to the consequent improvement of the bread in digestibility. Because of its extreme volatility, the salt is completely expelled from the bread in the process of baking. Experiments by Prof. J. W. Mallet show further that the ammonia serves to neutralize any organic or lactic acid present in the flour.

Vegetable transformations, according to M. Em. Bourquelot, go on in mushrooms even after they are gathered, and may in a few hours affect the disappearance of trehalose and the production of mannite. The author has therefore taken the precaution of plunging his mushrooms into boiling water immediately after they are gathered, so as to arrest all change.

A manufactory of spurious coffee has been detected at Lille, at which were used 15 kilogrammes of chickory, 35 kilogrammes of flour, and 500 grammes of iron sulphate—the last to imitate the natural color of the grain. Luster was given by means of an oil.

Miscellaneous.—Continuing his investigations of allotropic silver, Mr. M. Carey Lea has found that the gold and copper colored forms on the one hand, and the blue, bluish-green, and steel forms stand in close relations to each other. Both are capable of passing into the yellow intermediate form indifferent to reagents. Blue silver can also be converted, through the agency of sulphuric acid, into yellow at ordinary temperatures, with retention of its active properties. By other experiments the author finds that from a single solution, and using one substance only as a precipitant, the whole range of different forms of allotropic silver can be obtained, by simply varying the proportions of the precipitant. A well-marked tendency of acids is to give rise to the yellow product, and of alkalis to the blue. Both substances can be obtained from neutral solutions, and slight changes are sufficient to alter the product. While the presence of an organic substance has been found most usually conducive to the production of the allotropic form, this is not essential, and the author has obtained it, transitorily, with hypophosphorous and phosphorous acids. Light has a reversing effect upon this form of silver, first exalting its sensitiveness, and then destroying it. The phenomena connected with the reduction of silver, observed under a variety of conditions, seem to lead up to the conclusion that when the reduction is direct—from the condition of the normal salt or oxide to that of the metal—the reduced silver always appears in its ordinary form; but when the reduction is indirect, when the change is first to

suboxide or to a corresponding subsalt, the silver presents itself in one of its allotropic states. The facts on which this conclusion is based lead to the question whether silver exists in its subsalts in the allotropic form. Among the facts that support this view is the rich and varied coloration of the subsalts corresponding to the variety of color of allotropic silver, while the normal salts when formed with colorless acids are mostly colorless. On the other hand, the greater activity of allotropic silver and its less specific gravity seem to indicate a simpler molecular constitution than that of normal silver.

To obtain a fuller knowledge of the behavior of palladium toward the electric current, Edgar F. Smith and Harry F. Keller first experimented in the electrolysis of the double cyanide in an excess of potassium cyanide. Metallic deposition did not occur until after the expiration of thirty-six hours, or till the excess of potassium cyanide had been converted into alkaline carbonates. The deposition was black, but the precipitation was not at all complete. No deposition of oxide was noticed on the positive pole. With a feeble current acting on a solution of palladium chloride in the presence of a large excess of potassium sulpho-cyanide, the deposition was exceedingly rapid, accompanied with noticeable spongy spots, and black. The next attempt was made with palladamonium chloride, in just sufficient ammonium hydroxide to retain it in solution. The precipitation was incomplete after a night of action, but a deposition at the positive pole, which first gradually increased in mass and assumed a black color, had disappeared; and in all instances where the ammonium hydroxide was in decided excess the precipitation of oxide at the positive pole was not observed. The palladium thrown out upon the platinum dish in these experiments being very slow in dissolving, the platinum dishes were in subsequent experiments first coated with a layer of silver. In these experiments, of which six are described, the precipitations were complete, the differences between the amounts found and the amounts calculated coming within the limit of error, and the deposits were bright, metallic, and dense, without sponginess.

Continuing his experiments in electrolytic separations, Mr. Smith, assisted by Leo K. Frankel, acting upon the observation made in the palladium experiments that the deposition of that metal from the solution of its double cyanide was not possible so long as any undecomposed potassium cyanide remained in the solution, attempted the separation of the palladium from the metals which are deposited from their double cyanide solutions. With solutions of mercuric chloride and palladium chloride *plus* potassium cyanide, the separation of mercury was satisfactorily effected in sixteen hours. The separation of mercury from arsenic likewise proceeded without difficulty. The separation of cadmium from arsenic was not complete unless the arsenic existed in the solution as the higher oxide. Similar conditions control the separation of silver from arsenic and of copper from arsenic, but in the latter case a stronger current is necessary. Satisfactory results were obtained in the separation of copper from arsenic in a solution containing an excess of ammonia; but

the method requires skill and close attention to details. Similar experiments, with successful results, are recorded in the separation of mercury, silver, and cadmium from tungsten and from molybdenum, and of copper from bismuth.

According to investigations by Prof. W. R. Dunstan and T. S. Dymond of the conditions, under which hydrogen peroxide is formed from ether, ordinary ether, prepared from methylated spirit, yields that compound when it is exposed for several months to sunlight or the electric light. Contrary, however, to the usual statements, pure ether and ordinary ether which has been purified by treatment with dry chromic acid do not give a trace of hydrogen peroxide when exposed to light under similar conditions. Neither water nor dilute sulphuric acid was found to form hydrogen peroxide when exposed to light in contact with air. The production of the peroxide from ether was referred by the authors to the presence of a minute quantity of impurity in the ether employed. Hydrogen peroxide is formed when ozone acts on ether in the presence of water, and is also produced under certain conditions during the slow combustion of ether in contact with water.

The methods in use for the disposal of sewage are divided by Mr. C. G. Moore into three classes: Lime processes, in which a good effluent is the only thing aimed at, while the sludge is worthless; processes in which lime is not used, the best known of which is that of precipitation by a mixture of clay, alum, and charcoal with a little blood, whereby a sludge of some little value is obtained; and irrigation, which is objectionable on practical and sanitary grounds. Mr. Moore proposes a way of distilling ammonia from the sludge cake, in which the residue is made to descend in the furnace to serve as fuel for the succeeding charge. The furnace was kept burning continuously, and fed with sludge cake alone. The sludge, although some of it contained 30 per cent. of water, gave ample heat for its own combustion; and it might be used, if desired, to raise steam in the same furnace. The ammonia comes over with the liquor just as in gas works, together with a quantity of light, buttery tar, which floats on the liquor. The cakes are reduced to a fine ash, which, if the temperature is raised by increasing the blast, can be changed into clinker. A very slight blast is sufficient to distill with. By this method the author obtained 80 per cent. of the theoretical yield of ammonia.

CHILI, a republic in South America. The executive power is exercised by a President, elected for five years by the indirect vote of the nation, and not re-eligible for the succeeding term. He is assisted by five Cabinet ministers, in charge of the main departments, and shares his authority with a Council of State, of which five members are nominated by him and six are elected by Congress. The members of the Cabinet are members of the Council of State *ex officio*. The legislative power is vested in the Congress, consisting of the Senate, the members of which are elected for six years, and of the Chamber of Deputies, in which the term is three years. The Senators, forty in number, are elected to represent the provinces by the direct vote of the people, and the Deputies, of whom

there are 125, are chosen by the same electors (every Chilean having a vote who can read and write and is twenty-one years of age), in the proportion of one for every 30,000 inhabitants and fraction thereof in excess of 15,000 in each department. José Manuel Balmaceda was elected President in 1886, to serve till Sept. 18, 1891. The ministry constituted on May 30, 1890, consisted of the following members: Secretary of the Interior, E. S. Sanfuentes; Minister of Foreign Affairs, Worship, and Colonization, J. E. Mackenna; Minister of Justice and Education, Bafiados Espinosa; Minister of Finance, T. N. Gandarillas; Minister of War and Marine, J. Velasquez; Minister of Industry and Public Works, J. M. Valdes Carrere.

Area and Population.—The area of Chili is 293,970 square miles, including 75,292 square miles in Patagonia and Tierra del Fuegos; the territory of Antofagasta, that formerly belonged to Bolivia, of which the area is 60,968 square miles, the district of Tarapaca, 19,300 square miles in extent, that was ceded by Peru in the treaty of Oct. 20, 1883; and the Tacna province, with an area of 8,685 square miles, the inhabitants of which are to decide at the end of ten years whether it shall be Peruvian or Chilean territory. The population of the 23 provinces was estimated in the beginning of 1890 at 2,715,400, including 2,757 in the territory of Magalanes, embracing the Chilean possessions south of 47° of south latitude. Santiago, the capital, had 200,000 inhabitants in 1885, and Valparaiso, its seaport, had 105,000. The next largest towns are Talca and Concepcion, with 24,000 each. There were 87,077 foreign residents in Chili in 1885, of whom 57,882 came from Peru, Bolivia, and the Argentine Republic, 6,808 were Germans, 5,303 British, 4,198 French, 4,114 Italians, 2,508 Spaniards, 1,275 Swiss, 1,164 Chinese, 924 Americans, and the rest from other parts of Europe and America. The estimates of population are based on the census of 1885, which is known to be imperfect. The country is supposed to have not less than 3,173,000 inhabitants, including 50,000 savage Indians.

Finance.—Aside from the nitrate duty, which pays one third of the expenses of the state, import duties constitute the main source of revenue. The total receipts in 1888 were stated to be 71,135,501 pesos, or dollars, and the expenditures 46,135,501 pesos. The budget for 1890 made the revenue 90,645,735 pesos, and expenditures 59,387,200 pesos. For 1890 a revenue of 58,000,000 pesos was expected in addition to the balance of 31,257,526 pesos brought over from 1889, and the total ordinary expenditure was estimated at 67,069,809 pesos. The public debt on Jan. 1, 1890, amounted to 93,617,955 pesos, including 22,487,916 pesos of paper currency. The foreign debt was 47,116,460 pesos, and the internal debt 24,013,579 pesos.

The Army and Navy.—The military law of Dec. 30, 1887, fixed the strength of the army at 5,835 men, consisting of 2 regiments of field artillery, a battalion of coast artillery, 8 battalions of infantry, 1 of engineers, and 3 regiments of cavalry. The National Guard consisted of 48,530 men. The regular army had 5 major-generals, 7 brigadiers, 29 colonels, 76 lieutenant-colonels, and 824 subordinate officers.

The navy in January, 1890, comprised 3 iron-clad battle ships, 1 deck-protected cruiser, 2 torpedo cruisers, 3 corvettes, 3 rams, 2 transports, 2 gunboats, and 10 first-class and 2 second-class torpedo boats. The "Almirante Cochrane" and the "Blanco Encalada" were built in England, by Sir. E. J. Reed, in 1874 and 1875, and each had a displacement of 3,500 tons, engines of 2,900 horse-power, and compound armor 9 inches at the water line, and could steam 12 knots an hour. The armament of the former consisted of 6 12½-ton guns mounted in a central battery, and that of the latter of 4 18-ton and 2 7½-ton guns, in a casemate covered with 8-inch compound plates. The third ironclad is the "Huascar," built in 1865, and captured from Peru in the war of 1879, having 2,000 tons displacement, 1,050 horse-power, 4½-inch armor at the water line, and 2 12-ton guns mounted in a turret, protected by 5½-inch armor, besides 2 40-pounders. The protected cruiser "Esmeralda," built by Armstrong, in 1883, is of 2,810 tons displacement, with 1-inch armor on her convex deck running down below the water line, 6,500-horse engines, a speed of 18½ knots, a cruising radius of 2,200 miles at 10 knots speed, and an armament of 2 25-ton breech-loaders and 6 4-ton guns, besides machine guns and 3 torpedo tubes. The "Almirante Lynch" and the "Almirante Condell," twin torpedo cruisers of 750 tons, are reputed to be able to make 21 knots an hour and to carry coal for a cruise of 2,700 miles. Besides automatic torpedoes, they carry 3 14-pounder and 4 3-pounder rapid-firing guns. The other vessels are of old types, including the "O'Higgins" and the "Chacabuco," wooden vessels of 1,100 tons; the "Magallanes" and the "Pilcomayo," of 800 and 600 tons respectively, built of wood and iron; and the "Abtao," also a composite ship, of 1,050 tons, all slow, and armed with light guns. In 1890 the *personnel* of the navy comprised 5 rear-admirals, 59 captains, 27 lieutenants, 160 other officers, and 1,609 sailors. There were 90 cadets in the naval academy at Valparaiso. The "Presidente Pinto" and the "Presidente Errazuriz," steel deck-protected cruisers of 2,080 tons, with wood and copper sheathing, calculated to steam 19 knots and carry coal for a voyage of 4,500 miles, and each intended to carry 4 6-inch and 2 4½-inch Armstrong breech-loaders, 10 rapid-fire and machine guns, and 3 tubes for Whitehead torpedoes, were then building in France. The "Capitan Pratt," a steel armor-clad of 6,000 tons, designed to steam 17 knots, was in a less advanced stage, and another deck-armored cruiser of 4,500 tons and two torpedo gunboats were begun.

Production and Commerce.—The majority of the population follow agriculture. The wheat crop averages 21,000,000 bushels. The annual wine product amounts to 24,000,000 gallons. The country is rich in valuable minerals, producing an average of 750,000 tons of nitrates, 40,000 tons of copper, and considerable quantities of silver and gold. The total value of the imports in 1889 was 65,090,013 pesos, of which 10,887,636 pesos represent textile manufactures, 6,766,985 pesos stand for sugar, 5,083,715 pesos for cattle, 2,992,905 pesos for coal, 2,895,630 pesos for manufactures of iron, 1,415,246 pesos for bagging, 870,194 pesos for timber, 817,-

940 pesos for tea, and 793,425 pesos for wine. The exports of mineral products amounted to 56,452,089 pesos; agricultural products, 7,481,478 pesos; specie, 794,017 pesos; manufactures, 52,966 pesos; various products, 55,453 pesos; re-exports, 1,127,097 pesos. The values exported of the staple articles were as follow: Nitre, 36,387,210 pesos, against 33,866,196 in 1888 and 28,690,970 in 1887; bar copper, 5,689,329 pesos, against 13,878,439 in 1888 and 6,993,137 in 1887; silver, 4,906,791 pesos, against 7,723,957 in 1888 and 8,291,920 in 1887; wheat, 2,915,215 pesos, against 4,548,729 in 1888 and 5,663,333 in 1887. Of the total imports in 1889, the port of Valparaiso received 45,752,290 pesos; Iquique, 5,575,521 pesos; Talcahuana, 4,974,425 pesos; and the rest passed through Coquimbo, Antofagasta, Pisagua, and Coronel. Of the total exports, Iquique shipped 22,896,805 pesos; Pisagua, 15,536,174 pesos; Valparaiso, 9,691,920 pesos; and the other ports between 2,000,000 and 4,000,000 pesos each. The exports to Great Britain amounted to 56,898,407 pesos; to Germany, 4,751,990 pesos; to France, 4,295,055 pesos; to the United States, 2,070,304,694 pesos; to Peru, 2,071,304 pesos. In 1888 the imports from Great Britain were 26,351,141 pesos in value; from Germany, 14,046,577 pesos; from France, 6,181,513 pesos; from the United States, 3,133,173 pesos; from Peru, 4,345,497 pesos.

Navigation.—The number of vessels of over 100 tons in the Chilean commercial marine on Jan. 1, 1890, was 152, of the aggregate burden of 102,391 tons, and of these 29, of 30,934 tons, were steamers. During 1889 there were 11,109 vessels, of 9,723,998 tons, entered, and 11,286, of 10,174,173 tons, cleared, at all the ports. Of these, about 40 per cent. were Chilean, 30 per cent. British, and 30 per cent. of other nationalities. English, French, and German steamers run between Chilean ports and Europe by way of Cape Horn, and English and Chilean lines along the Pacific coast northward.

Communications.—The first railroads in South America were built in Chili by American engineers. The aggregate mileage open in 1890 was 1,700, of which 670 miles, built at a cost of 48,247,398 pesos, were state property. The telegraph system embraced 13,730 miles, the state owning 8,000 miles, over which 603,628 messages were dispatched in 1889. The postal traffic consisted of 17,606,056 letters and 24,715,629 newspapers and circulars.

Constitutional Conflict.—The Chilean Constitution, adopted in 1833, was copied from that of the United States. The social organization of the country was rather feudalistic than democratic. The owners of the soil and of the mines, descendants of the Spanish conquerors, constituted an oligarchy which for many years ruled in accordance with its aristocratic predilections and the views of the clergy, under the name of the Partido Conservador or Conservative party. The clash with modern ideas and rivalry between leaders led to revolutionary outbreaks in the middle of the century, which ended in the triumph of a form of Liberalism that was far from satisfactory to the Radicals, and a period of quiet progress succeeded under the rigorous administration of President Montt and his minister, Varas. The Constitution was revised in 1874, and some belated reforms were introduced

in the way of extension of the voting franchise, public education, and religious tolerance. Save in the one struggle in which the parties resorted to arms, the political development of Chili was free from civil disturbances, and the ruling class was distinguished among the Spanish-American nations not only for wealth and education, but for its talent for government and love of constitutional liberty. The republic was called "the England of South America," and it was a common boast that in Chili a *pronunciamento* or a revolution was impossible. The spirit of modern Liberalism became more prevalent. The Conservative or Clerical party withdrew from electoral contests, although it still exercised a restraining influence in political life, being composed of the wealthiest families and the whole body of the clergy. The Nationalists, as the Monttvaristas came to call themselves, counting in their ranks many distinguished lawyers, judges, scholars, and diplomatists, lost ground, and the Advanced Liberals grew in influence and power.

As the Liberal party became all-powerful it split into factions, divided by questions of principle and by struggles for leadership and office. Practices have sprung up in the system of government, founded rather on custom than on constitutional law, by which it is assimilated in some respects to the responsible or parliamentary government of European states, and especially of England. Almost from the beginning it has been the custom of Presidents to choose as ministers representatives of the dominant elements in Congress and to dismiss them after a vote of censure. Congress can withhold supplies, and has another effective check over the Executive in the annual bill to fix the forces on land and sea, which corresponds exactly to the English mutiny act. These safeguards have compelled Presidents generally to act in harmony with the majority in Congress. The patronage of the Chilean President is enormous, embracing not only the general civil service, but local officials, except in the municipalities, and all appointments in the army and navy and in the telegraph and railroad services and the giving out of contracts. The President has always been able to select his successor, and has exercised this power, usually in harmony with the wishes of influential statesmen, sometimes calling a conference of party chiefs to decide on a candidate.

In the course of time the more advanced wing of the Liberals grew more numerous than the Moderates. The most radical section had its nucleus in a Reform Club in Santiago, composed of young university men, of whom Balmaceda was the finest orator. Entering Congress in 1868, he took a leading part in debates. He was one of the founders of the new Liberal party that demanded large changes in the Constitution and gained rapidly in strength, particularly when the wave of national enthusiasm that followed the victory over Peru swept over the country. He added greatly to his reputation by his services as minister to the Argentine Republic during the Peruvian war, and when made Minister of Foreign Affairs, by President Santa Maria, in 1885, he was the most popular man in the country; but his claim to the presidential succession was contested by various other aspirants—older politicians and leaders of factions striving for

supremacy in Congress. He was elected by an overwhelming majority, and as President enjoyed an unexampled degree of popularity. For two or three years the politicians who had been his party associates worked in harmony with his ideas. A thorough system of popular education, the separation of church and state, and the development of democratic government were the aims he followed with the support of the majority in Congress. A system of normal schools was established, and expensive school-houses were built in all parts of the country. The cemeteries were secularized, a civil-marriage law was passed, religious freedom was decreed, and sectarian teaching was banished from the schools and colleges. The Government carried out internal improvements on a grand scale, building railroads, dredging harbors, making dry docks, wharves, and piers, and the success of the administration was so striking, the progress and prosperity of the country so undeniable, that many of Balmaceda's former enemies came over to his side. At the flood of the democratic tide he was the most popular man in South America. But when the old territorial families saw the seats in Congress and the posts in the civil service that had been their prerogative filled by new men, and fortunes made by upstarts where all chances had been at their disposal, then a reaction set in, corruption was scented, and Moderate Liberals, joining hands with the Nationalists and the reviving Conservative party, formed an opposition of respectable strength. In the earlier part of his administration Balmaceda had the co-operation of the Nationalists, who were represented in the Cabinet. In the last two years of his term, when the time drew near for selecting his successor, defection and revolt and the rivalries of aspirants for the succession threw the party into disorder and angered its hitherto unquestioned leader. After the resignation of the Cabinet in 1888 the Nationalists declined to take part in the next one, and their secession was followed by the breaking up of the administration party into warring factions. When coolness arose between him and the leaders of the party, he sought other advisers, and made the broker Sanfuentes, who had been his business agent, his chief confidant. President Balmaceda had appointed one ministry after another, seeking to satisfy the different wings of the Liberal party. The ministry of October, 1889, of which Mariano Sanchez Fontecilla was chief, with whom were associated Isidoro Errazuriz, Pedro Montt, Juan Costellon, and others chosen from various groups, was designed to bring about harmony in the party, as it contained the chiefs of five separate factions of the Liberal party, and at first it had a majority in the Chamber of Deputies of 73 to 64. The hostility that the President had aroused in society, to which the press gave free expression, was very bitter before the opposition in Congress grew formidable, and he had obtained the power of the Executive and given grounds for charges of arbitrary conduct that was contrary to precedents, if not against the letter of the Constitution, in carrying out the important innovations that Congress had sanctioned in the face of obstacles raised by powerful opponents. When the Conservatives and Monttvaristas united and were

joined by dissentient Liberals, it was suspected that the coalition intended to take advantage of the division in the Liberal party to elect the head of the Conservative party, Augustin Edwards, to the presidency and undo the democratic reforms. The President, on the other hand, persisting in the policy that had at first won praise from every quarter, and finding new agents when his old coadjutors stood aloof or went over to the other side, was accused of seeking to form a personal party in order to perpetuate his power by nominating some mere tool to succeed him as President. In January, 1890, the Opposition were strong enough to place their candidate in the chair when the House of Representatives organized. The ministry resigned, and a conflict between the Executive and legislative branches of the Government was openly begun when the President appointed a Cabinet of his own selection, giving a portfolio to the obnoxious Sanfuentes, and placing at its head Adolfo Ibañez, who could receive no support from Congress. This ministry had to face an overwhelming majority against the President, which treated him as a dictator and began to pass hostile laws and resolutions that were vetoed, and refused to consider the measures that he recommended.

The ministers were cited before the Chambers and questioned about the manner of their appointment. They either declined to answer, or answered in a way that increased the animosity of Congress, which finally passed a vote of censure, in obedience to which, as was usual, the Cabinet resigned. Then Balmaceda appointed a ministry in open defiance of Congress, with Sanfuentes at its head, the man who was already spoken of as his selected candidate for the presidency. He prepared for the struggle that he invited by removing the chiefs of the administration of the departments and replacing them with men devoted to himself and his policy, and making changes in the police, the militia, and, to some extent, in the army and navy commands. The press denounced him as a dictator, and indignation meetings were held in every town. Balmaceda and his supporters pretended to be not only the champions of the people against the aristocracy, but of the principle of Chili for the Chilians. The banking house of Edwards, the firm of the Conservative leader, was associated with Col. North, the Englishman, in the ownership of vast nitrate deposits in the north. The Chilians are as jealous of foreign influence as any of the South American peoples, and looked on the growing activity of foreign enterprise in the country with mistrust. The acquisition of railroads not already owned by the state and the reservation of mining rights for Chilian citizens formed a part of Balmaceda's declared policy. The presence of European workmen in the mines, seaports, and nitrate districts was resented by the native laborers, and in June a series of riots broke out in Valparaiso, Coquimbo, Iquique, Arica, and other places. These were ascribed by the Opposition to machinations of the President, whose motives were supposed to be to gain a popular following and to produce disturbances that would furnish an excuse for a dictatorship. The administrative *personnel* was so changed that *intendentes* of provinces, gov-

ernors of departments, *subdelegados* of counties, inspectors of police, commanders of the national guard, and chiefs of police stood at the beek of Balmaceda, ready to act in concert.

The Congress, when it met in ordinary session on June 1, instead of summoning the ministers before it for explanations, as was usual, carried a vote of censure in both houses, and showed a firm determination to compel the President to take his Cabinet officers from the majority and remove all officials who were attached to his political fortunes. The time was approaching for the election of municipal officers, Deputies, and Senators. These minor elections would virtually decide the subsequent election of the President. It was a novel thing for the Congress to be in antagonism to the President, and for it to attempt to secure the nomination and election of a successor opposed to his policy. Yet such a contingency had long been contemplated by Balmaceda's former party, which had adopted the principle of liberty of election as the main plank in its platform, and proposed schemes for purifying the ballot and taking the electoral machinery out of the hands of the Central Government. To deprive the President of his power to control the elections and prevent the election of Sanfuentes, who was already announced as the official candidate, a municipal bill was introduced in Congress which would have substituted municipal for Executive influence at the polls very effectually. This bill the President declared he would never allow to become a law, because it was directed against himself, and was contrary to the spirit of the Constitution. The outcry against Sanfuentes as a puppet of Balmaceda caused the President to ask him to resign his portfolio and his candidacy. The Congress attempted to force the President to dismiss his personal Cabinet and appoint parliamentary ministers, by not passing the contribution bill for the collection of revenue in the custom house and other branches of the public service. The period of eighteen months for which it had been voted expired when the session came to an end on Sept. 30. To end the deadlock by a settlement of the practical question at issue, the President made a proposition that a presidential candidate should be selected by a convention of all the parties. With the object of enabling the Conservatives to take part, he suggested that no political programme should be drawn up, and in order to insure the election of a candidate not distasteful to either the Nationalists, the Conservatives, the Radicals, or the various Liberal groups, he requested that a two-third vote of the convention should be necessary to proclaim a candidate. If the majority in Congress thought that the President could influence that proportion, they might make it a three-fourth vote, or four-fifth, or any number that they chose. This scheme was at first regarded with favor, but on the following day the House decided to reject it, and continue the contest with the Executive.

The Capitol was filled with people from all parts of the country, who demanded that Balmaceda should make terms with Congress and keep the government on a legal basis or resign the presidency. A committee of influential citizens, representing all parties and classes of society, with

the Archbishop of Chili for their spokesman, extracted from him an agreement that, in order to avert revolutionary conditions, he would dismiss his Cabinet and return to the methods of responsible government, and would permit presidential candidates to be put forward as the free choice of party conventions. After several conferences with the citizens' committee, a Cabinet was named which gave general satisfaction, consisting of Belisario Prats, Salustio Hernandez, Gregorio Donoso, Macario Vial, Federico Errazuriz, and Enrique Focornal. The new ministers, after taking the oath of office, entered the hall of Congress escorted by a throng of citizens, and the Prime Minister announced the programme that had been agreed on between them and the President. There would be no official candidate for the presidency, and the Executive and all his subordinates would abstain from interference with the elections. Officials disregarding this rule or molesting any citizen for having opposed the President would be removed. Things ran smoothly for a short time. Many bills that had been tabled were passed, and the President acted in harmony with his ministers. The legal period of the session passed without the passage of the annual military bill and the appropriation bill. To have these passed the President convoked an extra session. Differences arose when the ministers proposed to change all the *intendentes* and governors, and when the majority in Congress and their friends outside began to form committees of elections and canvass the provinces, and entered into an electoral campaign in which the remnant of the party still faithful to Balmaceda were allowed no voice. On consultation with his old advisers, the President decided to make no removals, and prepared anew for the contest. The popular agitation against the President was renewed. Political passions rose to a higher pitch than before the truce. In the capital the *intendente* and the chief of police increased the police force and took measures for the public safety. The Minister of the Interior ordered the *intendente* to remove the chief of police, and when he refused appealed to the President, who sustained his subordinate against the minister. The ministers called on the President in a body, and in answer to their demands, he said that appointments and removals were the prerogative of the chief of the state; and that, having appointed officers in whom he had confidence, he would not dismiss them at the dictation of Congress, and would by no means take orders from his secretaries. This decision caused Congress to shelve the bills recommended by the President, providing for an increase in the salaries of custom-house employés, treasury clerks, employés in the Department of Education and in the courts, and of army officers, and for a savings bank for public servants, water works and sewers in the large towns, railroad construction, and other objects.

The ministry resigned, and a new one was immediately appointed, with Claudio Vicuña at its head as Minister of the Interior. When the Congress was informed on the following day, the President of the Senate invited the new ministers before Congress to explain the intentions of the President. They paid no attention to this

summons, and when Congress passed a vote of censure the chief of the Cabinet announced that the ministers were responsible, under the Constitution, to the President, and would retain their places as long as they possessed his confidence. The Presidents of both houses sent a note to President Balmaceda, asking him to order his ministers to appear and explain the situation. His answer was the immediate closure of Congress on Oct. 15. He acted promptly in order to forestall Congress, which had before it a motion to impeach the Sanfuentes ministry. Under the Constitution a ministry can be impeached while in office, or within six months after it has retired, on articles adopted by the House of Deputies; and while the trial is proceeding in the Senate the President has no right to prorogue Congress.

The Constitution of Chili provides for a provisional chamber called the *Comision Conservadora*, composed of fourteen members from both houses, which sits during the recess to supervise the acts of the Government, and possesses advisory but no legislative powers. The two parties in the constitutional controversy prepared for a crisis. The elections took place in November. Balmaceda's party, in districts where it was naturally in a minority, either carried the elections, or, if it lost, contested the results. This caused great popular excitement, and led to the intervention of members of Congress and questioning in the *Comision Conservadora*, and the appointment of semi-official investigating committees. The police began to interfere with freedom of assembly and of speech. Without constitutional authority the President declared Congress dissolved and the elections postponed. The President was mobbed when he went to open the new docks at Talcahuano, at Concepcion on his way back, and a third time on his return to Santiago. Processes and prosecutions were instituted against army men charged with disaffection toward the Administration, and a feverish activity was observed in the Ministry of War, at the head of which was Gen. Gana, who had made himself very popular among the officers. All the ministers were known to be men of action and of energy and deeply committed to the President's side in the controversy with Congress. The President, as commander-in-chief of the military forces, ordered the arms of the National Guard to be collected in the arsenals, brought the standing army to the capital, replacing with militia the garrisons in the provinces, and, on the pretext of maintaining peace, commanded the firearms in the possession of private citizens to be delivered up to the authorities. The *Comision Conservadora*, which passed a resolution permitting Senators and Deputies to take part in its proceedings, met daily to discuss the situation. According to the usual procedure, this commission called on the President to summon an extraordinary session of the Congress for the purpose of voting the annual budget and passing the regular army and navy bill. Balmaceda declined to comply, saying that he would find no difficulty in carrying on the Government. To notes petitioning him to change his ministers, and pointing out that after Dec. 31, according to the Constitution, no salaries could be legally paid out of the treasury, no public works continued, no taxes or duties collected, and that the

legal existence of the army and navy would cease, the President sent no reply. During November and December, army officers not in sympathy with the President were removed from command, military men were placed in civil posts, partisans of the President were promoted out of turn, and the army was so manipulated that it could be depended upon to defend the Government if civil war should result. Changes were made in the naval commands more cautiously because the Opposition had many adherents in that branch of the service. Public meetings were interdicted, and on Dec. 19 the Liberal and the Conservative Clubs were both closed by the police. Macario Ossa, a young member of the Conservative party, in the fray that took place when a meeting at the Conservative Club was suppressed, was shot by the police. His funeral was the occasion of a political demonstration. Diego Barros Arana and the other members of the commission to delimitate the Argentine frontier resigned as a protest against the arbitrary acts of the Government. The members of the Montt-uarista, the Conservative, the Independent Liberal, and the Radical parties united and organized and decided on a plan of action.

Revolt of Congress and the Navy.—The year expired without the convocation of Congress. On Jan. 1 the Opposition members of Congress—those of them who were ready to proceed to extremities—held what they called an extraordinary session, although the Constitution provides that Congress, except in regular session from June till the end of September, can only meet when it is called together by the President. A solemn act was signed by all the members present, which declared the President unworthy of his post, and no longer chief of the state or President of the republic, because he had violated the Constitution and was guilty of treason. The Congressional party had long been preparing their *pronunciamiento*. They had the land-holding aristocracy, the wealth, the clergy, and the foreign element at their back, and had secured the co-operation of the fleet, and still had adherents among the commanders of the army, who would be able, they supposed, to seize the Moneda or old Spanish mint that serves as the state Capitol, and permit a popular rising to achieve a bloodless revolution. The 7th of January was the day selected. The Opposition members of Congress went on board the "Blanco Encalada," the commander of the fleet having invited them to hold the session of Congress there, since there was no safety on shore. The ships sailed out of the harbor, and on the following day returned and hoisted the revolutionary flag that was expected to be the signal for the overthrow of the Government.

The Government had received timely notice of the design from some officers of the army, and Godoy and the other ministers and their subordinates acted promptly and with energy. People suspected of sympathy with the Opposition were arrested in hundreds. The Revolutionary Committee barely escaped with their lives—some, in disguise, to the ships, and others across the Andes to the Argentine Republic. The President proclaimed martial law, and declared the *intendentes* and governors his sole representatives in the provinces. The fleet waited

vainly in the harbor of Valparaiso for a favorable response from shore.

The lack of an army bill was exemplified by the opinion of the procurator fiscal, or military judge, that there was no authority to punish or hold a deserter, because the army had no legal existence from Dec. 31, 1890. The procurator was removed, and one more subservient appointed, but the country applauded his firmness and courage. The Supreme Court decided that the President had no power to pay out money without the consent of Congress, the question having been raised by the directors of the National Bank, who declined to honor Balmaceda's drafts lest they should be held liable. In consequence of this decision the judges were removed. The Treasurer of the republic refused to pay out money on the President's order, and was replaced by another man. Balmaceda, who had always been noted for his urbane manners and gentle disposition rather than for determination and self-will, hesitated before plunging the country into civil war, and is said to have written out his resignation. If he thought of yielding, he was dissuaded by Juan Mackenna and other resolute and uncompromising counselors. Officers of the army who asked to be relieved of their commands because they thought the President's attitude unconstitutional, were thrown into prison. Lauro Barros, who retired from the Ministry of Finance, was succeeded by Antonio Muñoz, a subordinate official, who held the post only a few days, giving it up on Jan. 6 to Julio Carrero, ex-Minister of Public Works.

Balmaceda's Manifesto.—The President forestalled the revolutionists by issuing on Jan. 1 a manifesto assuming a virtual dictatorship, although disclaiming the name of dictator, and defending his acts on constitutional grounds. His right to choose his Cabinet ministers was based on the text of the Constitution, which defines among the powers of the President that of "appointing and removing at will the ministers and the clerks of all the executive departments." The parliamentary system upheld by the coalition against him he declared to be incompatible with republican government. "The parliamentary regimen is monarchical government with republican ideas. A republic with a parliamentary government is an idea that finds no place within the experience and science of modern public law. Parliamentary government presupposes an irresponsible hereditary sovereign. The chief of the executive in such a government is practically the minister who commands a parliamentary majority, and who governs in its name. The Government of the republic is carried on by a chief and responsible ministers with temporary powers, and the President is elected, like Congress, by the people. The chief of the executive power, practically and by the Constitution, is the President of the republic." Chili is governed under the representative system, of which the characteristics are a responsible chief of state, an administrative cabinet, and the power to veto laws, not to dissolve parliament, vested in the elective head of the nation. If Congress had of deliberate purpose omitted to enact laws necessary for the legal continuance of the public powers, placing the President in an irregular position, its mem-

bers had failed to discharge their duty as laid down in the Constitution, and could not thereby create a right for any one to appeal to revolution. "Even in the event of the chief of the nation being liable for the shortcomings of the majority of Congress, a revolution can not be proclaimed as a remedy. The Constitution has foreseen the case when the President or his ministers may violate the Constitution and laws, and established the manner and procedure for making effective their responsibility for such action, which, on the part of any one else, is subversive and revolutionary." He had refrained from invoking Congress to an extra session because of the attitude that the majority might assume. He was bound to follow his judgment and exercise his discretionary powers to avert danger to the public welfare. The Constitution charges the President with the duty of maintaining public order at home and looking after the safety of the republic abroad, and declares that he shall use any means for these objects, always observing the Constitution and causing it to be observed. Without the civil service and the military forces he could not discharge this duty. The laws to provide for these are not exclusively in the power of Congress, but require the concurrent assent of the President and of the Council of State. The same situation had occurred before in his term of office when, during January and a part of February, 1887, he had carried on the Government without an appropriation bill or an army bill, and every President since the establishment of the republic had governed the country for days and even for months when Congress had neglected to pass these acts without being treated as a tyrant or dictator. "As a Chilean," he said "as the Chief of the State, I could not, with my convictions, accept the political position that the parliamentary coalition pretended to impose on me." He assumed no dictatorship because he declined to submit to the dictatorship of Congress, and to surrender the reins of government to those who traduced his purposes and sought to deprive him of his constitutional rights.

Preparations for War.—The President had the standing army of about 3,500 men and the funds in the treasury, amounting to several million dollars, partly in the banks. The proclamation of the Congressionalists leaders was answered by one from Balmaceda assuming a military dictatorship, and declaring the whole country under martial law. All newspapers were suppressed, except two, official organs that were established. Clubs and societies were closed, and people were forbidden to leave their houses after five o'clock. Private houses were watched and searched, and men of social position were bastinadoed to compel them to reveal the hiding-places of political refugees. The prisons were choked with persons prominent in social, professional, and commercial circles who were identified with the various parties. The farms and estates of leading rebels were pillaged, their crops burned, the houses sacked, and their blooded horses and cattle taken to mount and feed the troops. Servants, tradesmen, and guests acted as spies in every house, and through the month of January a reign of terror prevailed in Santiago and Valparaiso. Nevertheless, the

Revolutionary Committee was reorganized and intermittent communication was kept up with the navy and the revolutionary leaders. The families of Congressionalists emigrated, and thousands of suspected partisans fled into the Andes or across the frontier. The armed police force in the capital and its port numbered 2,000. The populace of Santiago and Valparaiso and of most of the southern cities and of the farming districts in the valleys of the Andes generally sympathized with Balmaceda, and regarded him as the champion of the democracy against the land barons, foreign priests, and alien capitalists, while the industrial and mining population supported Congress. The soldiers were confined in the barracks, and the sentiments of the officers and men were investigated, the less trusty troops being sent away and replaced by drafts from agricultural districts. The Congressionalist leaders were not prepared for the energetic measures of the Administration, which prevented any rising in the capital or in the cities of the south that they counted on. When the banks refused to pay out money on Balmaceda's orders, they were declared abettors of the revolution, the directors fled from arrest, and an official examiner took possession. The bank of Edwards was closed by order of the Government, and all the officials and clerks were imprisoned. The National Bank and the Bank of Valparaiso were unable to pay the 6,000,000 pesos that they held of Government funds, as depositors had drawn out their cash reserves to hoard. The directors were therefore induced to sign a request to the Government to issue 12,000,000 pesos of paper, on condition that they might use 1,600,000 to tide over their difficulties. The Government resorted also to wholesale confiscation and attached the bank accounts of all the Congressionalists.

President Balmaceda increased his army till he soon had 30,000 men under arms. The pay of the soldiers was increased to \$30 a month. The people in the interior, in the center, and south showed little interest in the struggle, and no active sympathy with Congress. Ignorant agriculturalists were drawn to the army by bounties, leaving the wheat fields without harvesters. The public works were stopped, and a large proportion of the 25,000 laborers enlisted. Admiral Viel set about completing the fortifications of Valparaiso, which was at no time safe from bombardment, except for the reason that the city was mainly owned by Congressionalists. The forces were placed under the supreme command of the Minister of War. Having all the railroads and some swift transports that could evade the fleet, the Government re-enforced the garrisons at all the ports, and had a military force in every district. In the vicinity of the capital there was an army of 16,000 infantry, 1,200 cavalry, and six batteries of field artillery, and in other parts of the country 14,000 men were garrisoned. Balmaceda issued proclamations ordering the pay of officers and men who fell in battle to be continued permanently to their families, increasing their salaries by 50 per cent., and offering two years' pay to sailors who would desert to the Government and a free pardon to officers who had joined the insurrection under orders from their superiors. There was some guerilla fighting in the center. Bridges and railroads were

destroyed to cut off the food supply of the capital. When insurgents appeared in numbers they were driven into the mountains. On Jan. 21 a mutiny broke out in the barracks at Valparaíso, and, though it was quelled, many soldiers deserted with their arms. Under Gen. José Francisco Gana as commander-in-chief, the army was organized in seven divisions, the first commanded by Maj.-Gen. Barbosa, with headquarters at Santiago; the second by Col. Guitterrez, with headquarters at Valparaíso; the third by Col. Wood, with headquarters at Quillota; the fourth by Lieut.-Col. Jarpa, with headquarters at Talca; the fifth by Col. Ruiz, with headquarters at Chillan; the sixth by Col. Soto Zaldívar, with headquarters at Angol; and the seventh by Lieut.-Col. García, with headquarters at Concepción.

The Congressional proclamation, appointing Capt. Jorge Montt commander-in-chief of the naval division for the restoration of constitutional government, was signed by Waldo Silva, Vice-president of the Senate; Ramon Barros Luco, President of the Chamber; Pedro Montt, leader of the National party; Señor Arana, ex-President of the Delimitation Commission; Gen. Manuel Vaquedano, senior major-general; Senators Augustin Edwards and Manuel Irarrazabal, leaders of the Conservative party; Deputy Eduardo Matta; and Senator Altamirano. Capitalists placed their fortunes at the disposal of the Parliamentary Committee, ladies sacrificed their jewels, and money and credit were not lacking in Europe and the United States, it being said that the nitrate speculators were ready to give material aid to the revolution. The admirals in the navy held themselves neutral or sided with the Government, and of the nine generals of division the majority kept out of the contest. Gen. Urrutia and Commander Canto organized the Congressional Volunteers, who were encamped on the island of Santa María, in the southern province of Arauco. Men were recruited in all the ports. Parties of volunteers went down to the shore, and were taken off at night by boats sent from the men-of-war. There was an insufficient supply of arms that had been secretly taken from the Government stores. Men came on rafts and boats from the mainland, and for lack of muskets were trained with sticks of wood in the practice of arms. The parliamentary party had not anticipated a war, and were behind the Government in their preparations. Gen. Vaquedano took the chief command of the land forces, and had under him Gen. Urrutia, Gen. Saavedra, Gen. Sotomayor Col. Canto, and others.

Movements of the Fleet.—When the fleet revolted the squadron at Valparaíso consisted of the ironclads "Almirante Cochrane" and "Blanco Encalada," the latter of which was made Admiral Montt's flagship, the cruiser "Esmeralda," the ram "Magallanes," and a corvette. The "Huascar," which was undergoing repairs, was afterward cut out by the rebels, who captured the torpedo boats, seized all the tugs and launches, took all the stores that were in the harbor, and carried off the Congressionals desiring to reach the fleet who could evade the police and soldiery. Troops lining the esplanade fired on the boats, and the crews answered by

firing over their heads, desiring to avoid bloodshed. The "Blanco Encalada" sailed for the Strait of Magellan to intercept the corvette "Abtao" and the two new torpedo cruisers expected from Europe. Officers declaring for the Government were put on shore. The "Aconcagua" and other captured vessels of the Chilean Steamship Company were converted into transports, storeships, or armed cruisers. The transport "Amazonas" was taken with a regiment of Government troops and a large store of provisions bound for the port of Antofagasta. These soldiers readily enlisted in the Congressional cause. The coast was declared blockaded by the Congressional Junta. President Balmaceda, in proclaiming the rebel fleet outlawed and piratical at the outset, had hoped for the intervention of European nations; but, following the lead of Mr. Kennedy, the British minister, the diplomatic corps offered no protest, and their governments decided to ignore the blockade, since to recognize it would involve the concession of belligerent rights. The blockade was not enforced against foreign vessels. The blockade of Valparaíso began on Jan. 16. The fort opened fire on the "Blanco Encalada," and a shell exploded in the men's quarters, killing six and wounding many more. Admiral Montt could hardly restrain the crew from returning the fire, and threatened to shell the fort if it fired again.

Campaign in the North.—After a few weeks of drilling at Santa María, the nucleus of the Congressional army, consisting of a few hundred ardent young men, embarked on the fleet for the northern province of Tarapacá. Half the men had no arms except the national *cuchillo* or dagger. The people in the north were all for Congress. The garrison at Pisagua revolted on Jan. 19, and the commander of the "Magallanes," which had arrived in the harbor three days before, took possession of the place in the name of Congress. Government troops were sent from Iquique to recapture it. Fighting took place at Zapiga on the 21st, and at the Izipiza Hospicio in front of the town on the 23d, which resulted in the defeat of the Congressionals, of whom 100 were killed, but the Iquique troops did not reoccupy the place till the 25th, when they came in stronger force, and marched in at night to escape being fired upon by the three naval vessels in the harbor. Another landing was made, and the Congressionals were repelled, but succeeded in bringing away about 200 of Col. Canto's scattered soldiers. The first attempt to gain a foothold in the nitrate province thus proved a failure. A large part of the patriot force was without arms and ammunition, and the squadron was running short of coal and provisions. To provide these a landing was made in the province of Coquimbo. At the rich commercial port of that name, which is the outlet of a flourishing mining district, the Congress party were received with open arms. The troops of the Government made only a pretense of resistance. Balmaceda's Minister of War made every attempt to recover the province, but the first regiment that was sent by land from Santiago deserted to the enemy. This province, being connected by railroad with Santiago, could not be held by the insurgents. The fleet was in constant need of coal, having to depend on the colliers that were

caught on the sea. There were large quantities stored at Coronel, in the province of Arauco, opposite the island of Santa Maria. Before the rebels established themselves in Tarapaca and removed their military base from that island, the fleet captured that town, which is the shipping point for the principal coal mines of Chili, and carried off all the stocks at the water side. To prevent this the Government had posted a strong garrison at Coronel. The "Esmeralda" steamed into the harbor and demanded the surrender of the town. When it was refused, grape and canister were poured into the town without preliminary warning to the population, and solid shot followed, which demolished the railroad station, burying 67 corpses in the ruins. After that the commandant capitulated.

Having supplied themselves with cattle and other provisions at Coquimbo and Serena, and about 200 rifles, the Congressional expedition returned to the northern coast with the intention of attacking Iquique. This intention they abandoned when they learned that Col. Robles had re-enforced the garrison with 500 regulars, landed at Patiblos. They determined to deliver the first blow at Pisagua, defended by only 340 men, under Col. Valenzuela. The "Cochrane," "O'Higgins," "Magellanes," and "Cachapoal" entered the harbor early in the morning of Feb. 5, and the land force was debarked under cover of the guns. The Congressionalists succeeded in gaining the heights and capturing the artillery planted there to receive the fleet. The Government force in the town and forts on the plain was between two fires, and, after a severe infantry engagement and a bombardment, which destroyed the greater part of the town and caused many deaths as the result of explosions of the oil tanks and nitrate works, marines landed and the infantry division executed an assault from the other side. After a brief struggle, the enemy surrendered. All the men and officers remaining, about 200, were taken prisoners and four Krupp guns were captured. The people of the district were eager to volunteer, and with the rifles captured from the enemy a division of 1,200 men was formed in a few days, including 200 men from the squadron. This force set out for Iquique by the railroad. It was calculated that if the advance was made by land the Government commander would be compelled to divide his forces in order to meet the column outside the town, and yet leave enough to prevent the town from being occupied by the naval forces. The harbor had been blockaded since Jan. 20. The land column had not advanced beyond Dolores when it met the advance guard of Col. Robles. The troops of Congress drew up on the heights, and charged the regular troops that formed in line on the plain at San Francisco, while the irregulars took position on the hill behind. Col. Robles, who commanded the body near the railroad, had to retreat with all the men he could get away at the first onset. The men on the hill held their ground till both commanders, Villagran and Requena, were killed and few of their men left. The Fourth Regiment was reduced to 60 men, who joined the Congressionalists. The killed on the side of Congress numbered about 125, and on the other side four times as many. This battle

was fought on Feb. 15. The victory made the rebels overconfident, as Col. Robles had succeeded in getting away with only 200 men, and, after capturing a train of mules left by a party of cavalry that wandered into their camp by mistake, and finding the baggage to consist of 200 rifles and 200,000 cartridges, of which they were in great need, they determined to fight the enemy wherever they were encountered. They met them again at Huara and underestimated their strength, for Col. Silinas had re-enforced Robles with the entire garrison of Iquique, 1,000 regulars and militia. An important reason for not delaying the battle was the fact that large re-enforcements of Government troops were advancing by forced marches from the north, the "Imperial" having landed a division in the Peruvian port of Ite and the "Santa Rosa" another at Arica. The fight began in the afternoon of Feb. 17. The rebels gained ground until they had discharged the whole of their forty rounds of ammunition, and then they fled in disorder, with the loss of 300 men, and 30 officers, among them Col. Manuel Aguirre, a large number of rifles, and the three Gatling guns and two cannons that they had captured at Pisagua and San Francisco.

The troops had all been withdrawn from Iquique to inflict this severe blow on the land force with the idea that the town could easily be re-captured if occupied by the marines. The naval forces took possession of the place on the 16th. On the 19th Col. Soto returned to take possession of the place, which was garrisoned by only 40 sailors, who were ordered on board; but Merino Jarpa, the commander, having heard of the reverse at Huara, determined to resist, and shut himself in the custom house. The fight lasted from dawn till dark. The people on the ships did not know the condition of affairs till noon. In order to drive out the little band, Soto's men set fire to the neighboring buildings, and the whole of the business quarter of the city was destroyed. Great damage was done also by the firing from the ships to protect the men besieged in the custom house and cover the landing of a relieving force. Admiral Hotham, commanding the British naval force, endeavored to intervene to prevent the destruction of property. The bombardment enabled the Congressionalists to achieve a complete victory, and on the following day Col. Soto surrendered the city and the remnant of his force joined the Congress party. Troops were landed to hold the town and strengthen the broken ranks of Col. Canto's little army. The intention was to bring up troops from Pisagua and fall upon Col. Robles, who, after the loss of Soto's command, had but 500 or 600 men remaining. On the 21st 1,000 of the Congressionalist soldiers arrived; but the contest was put off because one of the Government divisions joined the enemy at the same time, and on the 24th the other arrived. For this reason the Congressionalists camped in the town, protected by the guns of the fleet, until they could organize a larger force. The Congressional navy was now guarding the coast effectually. The last Government re-enforcements were landed on Peruvian territory, for which due apologies were demanded and given. However, it was reported that a third division was advancing across

the desert from Antofagasta, and the Congressionalists therefore made up their minds to advance upon the enemy's position. Col. Canto had 1,650 men and Col. Robles about an equal number, who were encamped at the junction of the railroads, but retired northward and took up a position at Pozo Almonte, about 30 miles east of Iquique. The Congressionalists, who had to repair the railroad that was destroyed by dynamite by the others as they retired, came up to them on the evening of the 6th of March. The Chilenos waste hundreds of cartridges without hitting a man; but in hand-to-hand conflict, when they throw down their rifles, disdaining the bayonet, and draw their knives, the combat is deadly. The Congressionalists advanced to the attack as soon as it was light in the morning, and when the shock was over 1,000 men lay dead or helpless on the field, and the Government troops were driven back away from the railroad, which was their only line of retreat. They broke and scattered, having lost in killed and wounded 700 men and many officers, and 400 taken prisoners. On the other side about 400 men and officers were killed or disabled. Col. Robles was fatally wounded, and while in an ambulance was murdered and mutilated by the savage soldiery. The conflict assumed early a cruel and vindictive character, the authorities at Santiago having set the example. Robles was believed to have shot all prisoners and wounded who fell into his hands, and to have done so by order of Balmaceda. The mutinous regiment which delivered up Pisagua to the navy massacred the Balmacedist officers, and when the place was retaken by Government troops every captured officer of the Congressionalist garrison was shot.

The last battle left the entire seaboard in the hands of the Congressionalists. The remaining forces of the Government retreated to the city of Tarapaca. On March 9 the "Esmeralda" entered the harbor of Antofagasta, and demanded the surrender of the town within three days under a threat of bombardment. One of the battalions of the garrison mutinied, killed the officers, and went on board the ship, and others were willing to desert. To prevent the whole command from going over to the enemy, Col. Camus, taking the rolling stock of the railroad, retreated to Calama, 180 miles up the line. Engines were found in the hold of a vessel by Col. Canto after he had occupied the place, enabling him to cross the desert to Calama, where the Congressionalists, after a week or two of preparation, suddenly appeared in force, causing the Government commander to flee into Bolivia with his division of 2,450 men, leaving behind a large quantity of munitions of war and commissariat stores. Despite the repressive measures of Col. Camus, who had a large number shot who showed signs of insubordination, one fourth of the command got away and joined the rebels.

The interior of Tarapaca was cleared of Balmaceda's soldiers. The fleet was augmented by the transport "Maipo," which was seized by Capt. Valduresio, of the Santiago garrison, who deserted with 120 men, and, with the aid of accomplices among the officers at Valparaiso, got away with the ship and a large quantity of Gatling guns, rifles, and ammunition. In the extreme north the Government still held the port of

Arica and the fertile province of Tacna in the mountains behind Arica. The troops of Congress had no difficulty in landing at Arica, and, on April 7, both places were taken without fighting. Balmaceda's commander had a division of 1,500 men, which broke up on the appearance of the rebel forces, a part going over to Congress, while the rest fled into Bolivia. Caldera and other points south of the desert were occupied, and thus, in addition to the nitrate fields, the rebels possessed two fertile districts from which they could get supplies, and had full command of the whole of northern Chili as far south as Copiapo. President Balmaceda declared all the ports in control of the insurgents to be closed; but this order could have no effect, except in cases like that of a German vessel, which, after loading with nitrate, put into a Government port, where the cargo was confiscated by Balmaceda's officials. After the period of war, famine, and anarchy was over the nitrate works began operations again, and the export trade revived to a considerable extent, the duties being paid to the officials of Congress. Caldera, betrayed by the garrison, fell into the insurgents' hands on April 16. Three companies, according to a prearranged plan, mutinied when drilling in the plaza, and fought fiercely with four other companies and the police. The gunners in the fort had been won over, and when the "Esmeralda" steamed into the port they turned their guns on the Government house. Upon that the loyal soldiers and inhabitants fled, and the place was occupied by the Congressionalists. In the sharp hand-to-hand fight between the rebellious and the loyal troops about 200 were killed.

The nitrate provinces of Tarapaca and Atacama afforded the forces of Congress a safe base of operations. Balmaceda's army was ten times as numerous at that time, but it could not cross the 150 miles of sandy desert and impassable ravines. The loss of the nitrate revenues, in ordinary times \$2,500,000 a month, was fatal to the Government at Santiago; while the greatly reduced receipts would enable the Congressional Junta to maintain its position and support the fleet and its army of 5,000 or 6,000 men till Balmaceda's term of office expired. The nitrate districts produced no food, but with money they could organize a commissariat and draw supplies from the southern provinces or from Peru, Bolivia, or California as long as they held the sea. From the ports of Iquique, Pisagua, Tocopilla, Antofagasta, and Taltal more than two thirds of the exports of the country were sent in 1899 and three quarters of the revenue was collected. An attempt was made to gain possession of the fertile islands of the Chiloe Peninsula. Both parties had earnest partisans there, and in connection with naval operations an insurrection was begun. This came to naught, because the Government concentrated troops there and fortified the seaports and important positions.

Balmaceda's Congress.—The elections of members of Congress and of presidential electors took place on March 20. Domingo Godoy, the Premier, issued orders that no official pressure should be exercised. Nevertheless, the military had charge of the polls. No one voted but members of Balmaceda's party, who elected a Congress entirely Liberal. The President-elect,

Claudio Vicuña, who had been put forward in the place of Sanfuentes and had retired from the Cabinet in order to become the official candidate, was a man of wealth, well known to the people, having held several Cabinet offices. The Congress irregularly elected, when most of the officers who should direct and supervise the elections were in prison or proscribed, met on April 20, to hear the President's message, in which changes in the Constitution, to deprive Congress of its power over the public purse and its control of the Executive, were recommended. As he was charged, he said, with the duty of administering the state and guarding the internal security, the position of Congress, which tended to the overthrow of the established order, obliged him to "assume all the public powers and bring together the elements necessary to make triumphant the principle of authority in Chili, without which nothing durable can exist." Under these circumstances he found imposed on him the "painful duty of reducing the chiefs and promoters of revolt to impotence by arresting them or driving them away from the scene of their activity." Among the cruelties credited to Balmaceda and his officers the worst were connected with the pursuit of supporters of the revolution, the torture of their friends who refused to reveal their asylums, and the assassination of the leaders who were arrested. The nominating convention chose Claudio Vicuña as the candidate for the presidency by 294 votes out of 296. The Congress passed a bill of indemnity for all the acts of President Balmaceda since Jan. 1, and another conferring on him extraordinary powers. He was authorized to arrest, imprison, and punish any person inimical to the Government; to expend the public revenue according to his own judgment without being called upon for estimates; to borrow money on the credit of the state without the previous authorization of Congress; to suspend the judicial power, dismiss judges, and deal with political offenses by executive decree; to suppress the rights of free speech, public meeting, and liberty of the press; to organize military tribunals and define their jurisdiction and authority; and to declare any part of the territory of the republic to be in a state of siege. The gold and silver reserve held by the treasury against the paper currency was ordered to be sold by Congress, and a new forced loan of \$20,000,000 was authorized. A new ministry was appointed by President Balmaceda in June, which was composed as follows: Premier and Minister of the Interior, Jules Barnabas Espinoza; Minister of Foreign Affairs and Worship, Manuel María Aldunate; Minister of Justice and Education, Francisco Xavier Concha; Minister of Finance, Manuel Aristides Zanartu; Minister of War and Marine, José Velasquez; Minister of Industry and Public Works, Nicanor Aguilde Espinoza. On July 25 the electoral college unanimously elected Claudio Vicuña President of the republic for the term beginning Sept. 18, 1891.

Organization of the Junta.—A *Junta de Gobierno*, or Provisional Government, was formally constituted at Iquique on April 12, for the administration in the name of Congress of the eight departments held by the revolutionists. The Junta was composed of Waldo Silva, Vice-

President of the Senate; R. Barros Luco, President of the Chamber of Deputies; and Jorge Montt, Commander of the Squadron. They appointed a Cabinet consisting of Isidor Errazuriz, Secretary of the Junta for Foreign Affairs, Justice, and Education; Joaquín Walker Martínez, Secretary of Finance; and Col. Holley, Secretary of War and Marine.

Naval Operations.—The fleet torpedo cruisers "Lynch" and "Condell," after a series of exciting escapes from the insurgent vessels, were brought safely into port at Valparaíso before the middle of March. Besides these, the Government possessed three small gunboats and a fast armed steamer, the "Imperiale," chartered from the Pacific Steam Navigation Company, which had successfully run the blockade five times to convey troops to the north. The "Cousino," another converted cruiser, after several voyages was captured by the revolutionists, who made an attempt to seize the "Pilcomayo," a new gunvessel that was waiting in the harbor of Montivideo, with a full force of sailors and marines, for a favorable opportunity to make the voyage to Valparaíso without being caught by the Congressional cruisers. A party of armed Chilians went on board with the intention of surprising the crew; but the object was detected, and they were overpowered after a pitched battle on the deck. The "Blanco Encalada" entered Valparaíso in a dark night with the intention of blowing up the "Mary Florence," a tug fitted up as a gunboat, with a fish torpedo. This missed its mark and destroyed the dry dock. The ship escaped unhurt from the fire of the fort. The "Mary Florence" and a torpedo boat that stole out after her were descried, and destroyed with their crews by shells from the "Blanco" and the "O'Higgins," which engaged the batteries at long range, and during the battle shells from the fort hit the hull and one of the guns of the "O'Higgins." After the arrival of the first of the two torpedo catchers, the "Condell," three rebel agents went into Valparaíso and nearly succeeded in getting possession of her. The whole crew and the officer in command were in the plot. The captain from on shore, seeing them starting the engine, got aboard before the gunboat began to move, and before he was seized and bound he gave the alarm; so that before she could get out of the harbor the other vessels surrounded her. A revolutionist named Gomez found means to spike the Armstrong guns in Fort Andes at Valparaíso. The Government at first hesitated to risk their flotilla in active operations, expecting soon to be able to crush the rebellion with a superior naval force. The "Errazuriz" and "Pinto" were ready, except their armament and crews. A severe check to the plans of Balmaceda was caused by the refusal of the French Government to let them leave France. The embargo, granted on representations of Congressional envoys, was removed in June after both sides were heard, but the French authorities still refused to allow crews to be recruited in France. A loan of £1,500,000, that had been subscribed in Germany for the construction of railroads, the bankers refused to allow Balmaceda to divert to military objects. His offers for a Greek war ship, for the crack new Argentine cruiser, and for fast merchant

steamers, were rejected. Joaquin Godoy was sent to Europe to endeavor to raise a loan and purchase ships. Meanwhile people were growing tired of the tyranny and cruelties of the military despotism, and to save the failing cause it was necessary to gain some success over the revolutionists, who were protected now from a land attack by the Atacama desert.

The torpedo gunboats were therefore got ready for an attack on the rebel fleet, aided by the torpedo boats, with the "Imperiale" as tender. On April 23 the torpedo cruisers surprised the "Blanco Encalada" at anchor in Caldera Bay, while she was undergoing repairs and unable to bring her guns into position. The attack was made before dawn. The ironclad had no torpedo net, had no picket boats out, and did not use search lights. Captain Moraga, approaching unobserved, fired end-on at a distance of 110 yards the bow torpedo, which missed the ironclad and sank an English merchantman. The torpedo catcher then sheered off, and at 65 yards discharged first one and then the other of the port torpedoes, both of which struck the "Blanco" in the bow. When first struck, the ironclad opened a heavy mitrailleuse fire on the "Condell." The "Lynch," following in the same course about 60 yards behind her consort, likewise sent her bow torpedo ahead of the ironclad, and when broadside-on struck her amidships. Two minutes later, nine minutes after the firing of the "Condell's" first torpedo, she foundered. The weapons were self-acting Whitehead torpedoes, of which each boat carried five. The "Lynch" was manoeuvred by Capt. Fuentes, who had been so successful in evading the blockade with the "Imperiale." Capt. Goni, of the "Blanco Encalada," was rescued with about 40 others, but 180 of the crew were drowned. The torpedo cruisers, after sinking the ironclad, met and engaged the transport "Aconcagua," which had 1,300 revolutionary soldiers on board, as she was entering the harbor, and during a combat lasting an hour and a half the "Aconcagua," commanded by Merino Jarpa, fired 190 shots without damaging the torpedo catchers, and finally forced her way into the harbor. On the following morning the two torpedo catchers and the "Sargeanto Aldea" attacked the cruiser "Magellanes" in Chañaral harbor. The smaller craft manoeuvred so that the big guns could not be brought to bear on them, and with their quick-firing and machine guns damaged one of the batteries and the rigging of the ship and killed 22 of her crew, but they suffered more severely, each of them being hit. They could not get within close enough range to use their torpedoes, and fired only one, which destroyed a merchant vessel. On April 28 the "Magellanes" stole into Valparaiso harbor in the night time; poured a broadside into the "Sargeanto Aldea," riddling her and killing or wounding half the crew; fired on the "Almirante Lynch," receiving a heavy fire in return; blew out of water a boat with 10 men sent to attack her with a torpedo; slipped astern out of a murderous cross fire of the "Lynch" and "Condell," leaving the Government vessels firing at each other in the darkness; got into position to rake the "Lynch" with a broadside that dismantled every gun; and steamed out of the

harbor at full speed as the forts opened fire, which they dared not do before for fear of destroying the Government vessels. One shell fell on deck, dismounting the pivot gun. The "Almirante Condell" was nearly sunk by her sister gunboat. On the "Magellanes" 40 men were killed, and on the other vessels double that number. The torpedo boat "Guacolda" was chased and sunk by the "Magellanes." The "Lynch" and "Condell" patrolled the coast and fired at long range into the rebel harbors. The officers and crew ran the torpedo launch "Guale" out of Valparaiso Bay to hand her over to the Congress party. The "Lynch" overtook and recaptured the launch at Papudo, and the 12 deserters were taken to Santiago and shot. An attempt was made to blow up both the "Lynch" and the "Condell" with dynamite. One of the minor accomplices in these plots betrayed the instigators, who were a quarter-master, who killed himself before he could be arrested, and a respectable merchant named Ricardo Cummings, who was shot with the man who betrayed him and another agent in the conspiracy.

Negotiations for Peace.—A large assembly of influential citizens who had taken no part in politics passed resolutions at Santiago on Feb. 1, in pursuance of which a committee waited on the President and urged him to change his advisers and restore peace. One of the committee spoke of the opportunity he had of following the patriotic example of O'Higgins and resigning, on which he closed the interview, saying that he was prepared to "go on to the end." After the Congressionalists had undisputed possession of northern Chili the Uruguayan Government offered to mediate, and received the reply from Balmaceda that there was no revolution, but a local revolt that would be suppressed in a few weeks. Not long afterward the diplomatic body arranged a conference between Balmaceda and Congressional delegates to discuss terms of peace. As commissioners of the insurgents, Eulogio Alamarin, Carlos Walker Martinez, Pedro Montt, Gregorio Donoso, and Belisario Prats went to Santiago. Bombs were thrown into the room during a Cabinet meeting and at ministers on the street, upon which Balmaceda broke off the conference after two days. He accused the commissioners of having instigated the bomb-throwing, canceled their safe conducts, and demanded of the foreign ministers, who had guaranteed their safety, that they should be surrendered for punishment. The ministers received them in the legations, and extended their protection until they were got on board the United States cruiser "Baltimore." The revolutionists supposed that the bomb-throwing was a trick planned by Balmaceda or his associates for the purpose of putting an end to the conference, because it took place immediately after the "Blanco Encalada" was sunk.

The peace proposals first emanated from Balmaceda's Government. While the representatives of England and Germany were treating with the Congressional authorities at Iquique, Balmaceda signified his acceptance of the mediation of Brazil, France, and the United States, not wishing the British and German ministers to take part in the negotiations, notwithstanding the fact that they had taken the initiative in the

matter with his knowledge and approval. The representatives of Brazil, France, and the United States, on accepting the office of mediators, proposed that both parties should formulate their proposals and demands, in order that the mediators could deduce concrete propositions to serve as a basis for negotiations. The Provisional Government consented, whereas Balmaceda's minister, Domingo Godoy, refused to present his views in writing until he had seen the conditions proposed by his adversaries. At this stage negotiations were abruptly terminated. The demands of the insurgent commissioners were the resignation and impeachment of Balmaceda, disbandment of army and navy, and reassembling of the old Congress pending the election of a new one.

On May 27th the Bolivian Government issued a decree recognizing the belligerent standing and rights of the Chilean Junta at Iquique.

The Itata.—The sinking of the "*Blanco Encalada*" did not end the war in Balmaceda's favor, as he expected it would. The revolutionists, though disheartened, were morally, financially, and strategically stronger than the Government. The position would be reversed when the ships came over from Europe, or if Balmaceda's Government could use the credit of the nation. The naval blockade could not be long continued, owing to the lack of coal, and to feed the force in the north provisions must be brought from distant places. It was necessary to strike at Balmaceda in the center of Chili. For this purpose an army must be raised and equipped. The main want was arms and munition. All the rifles and cannons, and even the clothes, of the Congressional army had been taken from the enemy. There was no difficulty in recruiting an army from the best fighting material in Chili. While Balmaceda resorted to the harshest kind of conscription, and forced Peruvian and Bolivian residents to join his army, and even drafted into it the convicts in the prisons, the Congressional leaders found two eager volunteers for every rifle they could furnish. In their seven battles in Tarapaca their fighting line was usually smaller than the enemy's; but reserves were sent up from the rear to snatch the arms of the men who fell and close up the ranks. To arm a force able to meet Balmaceda's army, Ricardo Trumbull, the agent of the Provisional Government, purchased munitions in the United States, some of which reached Chili. The largest consignment, consisting of 10,000 Remington rifles and 2,500,000 cartridges, was taken out of San Francisco on the American schooner "*Robert and Minnie*," which anchored off the Catalina Islands on April 25. The Congressional transport "*Itata*," one of the steamers chartered to the Provisional Government by the Chilean Transportation Company, was then in San Diego harbor, taking on a cargo of meat, flour, and other provisions for the army. The collector of customs at Wilmington asked for instructions, and was told in a telegram from Secretary Foster not to interfere with the transfer of the arms to the "*Itata*," as it would be no violation of the neutrality laws. The Attorney-General held a different view, and to keep the "*Itata*" from carrying off the arms, she was seized while in port by the United States

marshal, who left his deputy in charge. The commander of the Chilean steamer steamed out of port when he was ready, with the United States officer on board. He was afterward put on a pilot boat. The munitions were transhipped at night, and the "*Itata*" put out to sea. The question of the duties and responsibilities of the United States Government was a matter for the earnest consideration of the authorities at Washington. In the case of the "*Alabama*" the United States contended, and the arbitration court at Geneva decided, that a neutral Government must use due diligence to prevent the equipment or fitting out of armed cruisers or the use of its ports and waters for the renewal or augmentation of military supplies or arms. In the State Department it was held that the Government, having exercised ordinary vigilance and exhausted the means at hand to prevent a violation of neutral obligations, although it might have a right to take the vessel in outside waters, was not bound by international law to make the attempt. The Attorney-General and the Secretary of State were of the opinion that the pursuit and capture, if possible, of the escaped vessel, aside from the question of vindicating the insulted authority of the United States Government, belonged among the pacific duties of a neutral and friendly state. Accordingly, the cruiser "*Charleston*" was ordered to give chase. She was much faster than the "*Itata*," but the latter had a long start, and her course and whereabouts were unknown. The "*Esmeralda*" was in Mexican waters, waiting to convoy the transport, or to take off her cargo. The commander of the Chilean cruiser was Capt. Silva Palma, who had navigated the "*Itata*," with an armed force in concealment and guns masked, into San Diego, and carried off the deputy marshal, rejoining his vessel, while the "*Itata*" took a westerly course to elude pursuit. He made ready to fight the "*Charleston*" as she came up. On board the American war ship the guns were manned, and officers and crew were eager for the combat. Such a complication the members of the Junta were anxious to avoid, for it would prove a more serious drawback to their cause than the loss of the munitions. Through their representatives in Paris, they had already offered to deliver up the "*Itata*" to the American naval commander at Iquique as soon as she arrived at that port, outside which the American cruiser "*San Francisco*" was waiting with orders to intercept her. She was met by the "*Esmeralda*" off the Mexican coast, and was supposed to have transferred a part of her cargo, and on June 4 arrived at Iquique ahead of the "*Charleston*," and was surrendered to Rear-Admiral Brown, commander of the American naval forces, in accordance with a promise previously made to him by the Junta's Minister of Foreign Affairs. When she was restored to the custody of the United States district court at San Diego, the trial was continued, with the result that the court dismissed the libel on the ground that there was no violation of the United States neutrality laws, inasmuch as the Provisional Government in Chili had not been recognized as a belligerent. As this decision was at variance with the principles laid down in the "*Alabama*" case, the United States Government appealed from it, in

order that steps may be taken to amend the Federal law, if the court's construction of the statute is correct, so as to make it conform with international obligations.

The New Cruisers.—The "Presidente Pinto" and "Presidente Errazuriz," built for the Chilean Government in France, were completed, and lacked only their guns soon after the hostilities begun. The "Arturo Prat" was not ready, but even the two cruisers would be enough to enable the President to cope with the naval forces of Congress. It was therefore a serious disappointment to him when the French Government, in judicial proceedings taken at the instance of the agents of the Junta, placed an embargo on the two ships, in order to determine whether Balmaceda was, in international law, the ruler of Chili. The arguments dragged on till the middle of June, and resulted in the decision of the court that Balmaceda was President *de facto* until another person should be placed in the seat of power. The Junta met with the same response when it appealed to the Governments of Europe and of the United States and the sister republics in South America, excepting Bolivia. Financiers to whom Balmaceda applied for aid found his title questionable, and he met with delays in getting guns and in hiring crews and paying the expenses of the cruisers after they were released. The French Government prohibited its citizens from taking service, in accordance with its municipal law of neutrality. Lieut. Armit and another British naval officer accepted Chilean commissions, and enlisted men who shipped on the "Errazuriz," who took her to Lisbon. Chilean officers and marines had gone across the Atlantic to form the military force on the war ships. Men who joined the crew were put ashore or placed in irons when they demanded advanced pay, according to contract. Guns, the French contractors being unable to supply them in time, were obtained from the Armstrong firm. The officers had great difficulty in completing the crew in Lisbon, for the Portuguese Government forbade its subjects to go, took off Frenchmen at the request of the French consul, and required every foreign seaman who shipped to show a passport properly viséed. The "Presidente Pinto" met with worse mishaps. After leaving the French port, probably through treachery, for the Congressional agents were fertile in resources, she ran aground, and after being got off again and repaired, she was taken to Genoa and then to Kiel, in the vain endeavor to get on board the armament furnished by the Armstrongs, which the neutrality laws would not permit to be transhipped from the steamer that brought the guns from England in any European harbor. The "Errazuriz" was finally able to start for South America with a rough crew of many nationalities. This spurred the revolutionary leaders to extraordinary efforts to bring the conflict to an end before the President could make use of the new war ship.

The Final Campaign.—The Congressional army was trained in the German manner of fighting by Commandante Körner, who had served under Moltke on the Prussian staff. It was well supplied with modern repeating rifles, not only Winchesters and Remingtons, but Mannlichers, and smokeless powder. The "Maipo" arrived

at Iquique on June 27, with 8,000 rifles and other war material, and later the "Esmeralda" returned with a larger supply. Balmaceda's officers made ready for a campaign in the Coquimbo province, where the revolutionists landed in the latter part of June and occupied the seaport of Huasco. Balmaceda's forced levies offered no defense, but ran away after the first exchange of shots with the enemy's advanced guard, falling back on Villanar. That town was evacuated also when the Congressionalists appeared, and immediately afterward was retaken by the strong force of presidential troops that was hurried up from Coquimbo. The insurgents were likewise re-enforced by foot and artillery landed from the ships and cavalry advancing from Copiapo, and again drove back the enemy. Troops were sent up to contest the ground, a severe engagement took place on June 28, and skirmishing was continued for some weeks, the insurgents taking a strong position at Villanar that they could maintain against a superior force. The Government generals deemed it of importance to regain possession of this point, for from the valley it was possible for the rebels to strike Coquimbo in the rear. They had massed their army at three points, holding a force of 6,500 men at Coquimbo and La Serena, where the next struggle was expected to be, and a smaller division at Concepcion, ready for an attack or uprising in the south, besides the main body around Santiago. The rainy season made rapid movements of troops on land impossible. When the fighting began, Balmaceda sent re-enforcements as fast as he could, and after a while there were from 10,000 to 12,000 of his soldiers in Coquimbo. The operations on this coast were in reality a feint intended to draw away troops from Santiago and Valparaiso.

Balmaceda and his generals were surprised when a fleet of twenty ships anchored in Quinteros Bay, north of Valparaiso, on Aug. 20, and could scarcely believe that the rebels intended to fight his army of twice their strength, with other forces within call and the command of all the roads and strategic positions. There was doubt as to what part of the coast they intended to land on. Admiral Brown went down on the "San Francisco" to observe, and from the circumstance that the Government troops moved down to Valparaiso after his return, the Chileans afterward charged that American sailors must have acquainted Balmaceda's friends with the fact of troops debarking at Quinteros, within 20 miles of Valparaiso. In twelve hours all their forces were landed, consisting of 8,200 infantry, 3 batteries of field artillery and a naval battery, making 800 artillery, and 600 cavalry. The Secretary of War, Beñados Espinosa, who was chief in command under the direction of Balmaceda, had time to place in the first line of defense, in a strongly intrenched position at Conceon, 12 miles south of Quinteros, an army of over 8,000 men. The Government commanders were Gen. Barbosa and Gen. Alzarreca. Contrary to the judgment and instructions of Balmaceda, who intended that his generals should draw the enemy inland, and not engage unless they could oppose a force at least half as great again as the invading army, Barbosa determined to dispute the passage of the Aconcagua river, because beyond was the railroad to Santiago, that the revolutionary forces could

cut by taking the fortified position at Viña del Mar with the aid of their ships, or by turning it and destroying one of the bridges or the tunnel between Quilpue and Salto. The Congressional army, led by Col. Estanislao del Canto as commander-in-chief of the land forces, was divided into three brigades, of which the first was commanded by Col. Annibal Frias, the second by Col. Salvador Vergara, and the third by Col. Enrique del Canto. They marched through the night of Aug. 20, and took a position in the same order in which they marched, with the first brigade on the right, the second in the center, and the third on the left, their front extending for three miles along a ridge of hills facing the enemy, whose line of intrenchments stretched for four miles along the opposite bank of the Aconcagua. The battle was opened by the guns of Col. Canto's battery, and was taken up by the artillery along the whole line. The "Esmeralda" and three smaller vessels in Concon Bay, five miles from the ford, with heavy batteries and machine guns, kept up a well-directed fire on the enemy's position during the cannonading, which lasted an hour and a half. A naval battery of 12 Gardner mitrailleuses and a regiment of sharpshooters effectively supported the three brigades from good positions on the north bank. At one o'clock the infantry crossed the swollen river and climbed the hill under a hot fire, and, after an hour's hard fighting, the advanced guard of the Government was driven out, falling back on the strongly intrenched position of the main body on higher ground beyond. Supported by the artillery, the Congressional infantry assailed them there, and, after two hours more of desperate fighting, the President's commander drew off what he could save of his army. He began the fight with a force nearly equal to the enemy, and held a position that would have been impregnable, despite the deadly and distracting bombardment from the ships, if all his troops had the heart that a large part of them displayed. Such strenuous and courageous fighting between two tired armies has rarely been seen. The commanders knew better than Balmaceda the untrustworthy elements of which his army was largely composed and the dangerous temper of the population, imbittered by his barbarities, which he had crowned the day before the troops of Congress landed by having shot in relays 60 well-connected youths who had been caught meeting for some political purpose at Los Caños, an estate near Santiago. Railroad communication with Santiago was already closed by friends of the insurgents, who had destroyed the bridges with dynamite. There were enough troops in the field to overwhelm the Congressional army if the President's soldiers would fight. The events of the battle field at the Aconcagua crossing showed how necessary it was to strike quickly at Canto's army, and cripple it at whatever sacrifice. Although they were crippled, losing 300 killed and 700 wounded, their complete victory turned the chances of war in their favor. Their loss was made good by 1,500 men of the opposing army who deserted to them, some of them without breaking their formations. They took 18 field pieces and a large train of ammunition. On the Government side two whole regiments were annihilated and the killed exceeded 1,000, the wounded a much greater number. In the

retreat a part of the forces went off in good order, but a large part was scattered, and many ran off into the hills and eagerly threw off their uniforms and put on ordinary clothes that citizens gave them.

For the second line of defense Balmaceda had Viña del Mar, where his whole army of 13,000 men was intrenched in front of forts that commanded both the approach by sea and a part of the land approaches. The Junta's army marched down the south bank of the river over 15 miles of broken country, driving back the small detachments that had been posted at favorable places to impede its advance. In the evening of Aug. 23 Gen. Canto arrived in front of the main line of defense on the beach. The position was protected on the north by the estuary of Viña del Mar, and the intrenchments, on which the soldiers had been busy for two days, were guarded by the heavy guns of Fort Callao.

On the morning of Sunday, Aug. 23, Canto assailed this formidable position, and a furious battle raged during the greater part of the day. The Congressionalists dared not expose their ships to the guns of the fort, and therefore the navy could only aid them by an ineffective bombardment at long range, except on shore, where all the men that could be spared from the ships joined the land forces and did good service with their machine and quick-firing guns. The losses on both sides were heavy, and the combat was a drawn battle, as Balmaceda, who had come to the front to take command, was able to hold his forces together and defend the narrow line, in front of which there was not room for Canto to deploy his infantry. Finding that he could not force this position and co-operate with the navy in reducing Fort Callao, the northern defense of Valparaíso, Gen. Canto could not continue the campaign without parting from the fleet and running a great risk of having his retreat cut off. On Aug. 24 he drew off his forces, while the "Esmeralda" and the "Cochrane" kept up a fire on the forts at Viña del Mar to divert the attention of the Government troops, and pushed inland. Completing the obstruction of the railroad at Salto, they rested for a day at Quilpue, and on the 26th proceeded to march on Valparaíso by way of Las Palmas and Placilla, making a *détour* around the city in order to attack it from the south side, where there was the least exposure to the guns of the forts. Balmaceda manoeuvred to maintain a defensive position. When the enemy approached Placilla, he took up a strong position on the heights beyond the village, two miles nearer to Valparaíso. Desertions from Balmaceda's troops swelled the Congressional army to about 12,000 men.

On the morning of Aug. 28, long before daylight, the third and first brigades moved into position on the right and the left of the enemy's position, which extended two miles on the high ground overlooking the Placilla plain. The Government troops had no cavalry scouts out, but held their cavalry in reserve for the end of the battle, which the Balmacedists felt sure of winning if they were attacked, for their artillery was posted on hills commanding the village and the plain in front and on the right. Under cover of the darkness, the woods, and the undulating ground, the first and third brigades of

Canto's army got into place on the two flanks unobserved. About seven o'clock the second brigade descended the slopes, and the Government batteries opened fire on them as they advanced on the double quick over the plain. Thinking them the leading columns, the Government forces were concentrated to repel an attack in front. The wings advanced, and first the infantry on the Government right was driven back. Soon afterward the Congressional right wing began to advance, and at the end of two hours of fighting the weakened left of the President was nearly outflanked. The artillery in the center was turned to this quarter and checked the advance. The Tarapaca regiment melted under the destructive fire. Körner, coming to their support with two regiments, by a long *détour* turned the enemy's left flank completely. In the mean time the Congressional left was gaining ground, and the center advanced steadily. The artillery ammunition at the front began to run short, and the Government wings had both spent nearly all their cartridges. The Congressional batteries had advanced sufficiently to cover a cavalry attack up the hill from Placilla. The first charge was beaten back with great loss to the insurgents. A second followed, and the riflemen who were advanced to repel it were deceived by a detachment which gained the brow of the hill where Gen. Barbosa and Gen. Alzarrea were and sabered both the commanders. Meanwhile the Congressional right had gained the heights, having both flanked and pierced the defending line. The Government infantry broke and ran, except such as were eager for a chance to throw down their arms and surrender. The gunners still stood to their guns, and the cavalry came up under fire and charged the Congressional cavalry, to protect the retreating infantry as it fled down the road to Valparaiso. By eleven o'clock the battle was over. Of the Government troops, 3,000 were taken prisoners, 1,000 were killed, and 1,500 were wounded. The Opposition had 400 killed and nearly 1,000 wounded.

All resistance was now at an end, and nothing remained but to take possession of the town. Admiral Viel, the *intendente*, resigned his authority into the hands of the foreign admirals, who, in conference with Gen. Canto, named Carlos Walker Martinez as provisional governor. The victorious army began to enter the city at one o'clock, cheered by the entire populace. Capt. Alberto Fuentes, of the "Lynch," fled, but left the flag flying, and the boat was fired on from the shore until the colors were lowered. Insufficient guards were placed in the streets, and at night a drunken and frenzied mob held possession, firing buildings and terrifying citizens by the reckless firing of the discarded arms of Balmaceda's troops, murdering about 600 men, women, and children. The behavior of the victorious army was exemplary, with few exceptions. President-elect Vicuña, Capt. Fuentes, ex-Minister Godoy, and other men who were prominent in Balmaceda's Government fled on board the foreign ships.

Early in the morning of Aug. 29 Balmaceda's representatives at the capital asked for a conference with a view to its surrender, and Gen. Baquedano was commissioned to act for the Junta. The Congressional fleet entered the harbor of

Valparaiso, and Admiral Montt went ashore, and, at a conference with the foreign admirals and the *intendente*, demanded and was formally tendered the unconditional surrender of the city and of all the officers and troops as prisoners of war. The members of the Junta arrived from Iquique, and were installed at the capital on Sept. 3. Before the victors took possession of Santiago, the chief members and supporters of Balmaceda's government had escaped or hidden, or taken refuge in the foreign legations, where the hunted objects of their vengeance had received protection. The same vindictive fury was now exhibited by their adversaries. The corpses of the dead generals were paraded through the streets of Valparaiso. The wounded on the battle field were murdered by degraded savages, and those who escaped this fate were left to suffer for days where they lay by their victors, who neglected at first to organize a hospital service even for their own wounded. The houses of Balmaceda's friends were burned and their estates ravaged. A ceaseless hunt was kept up for the fallen President. When it was supposed that he had been taken on to the "San Francisco," the lives of Americans were not safe. He left Santiago on Aug. 29, in the hope of escaping on the "Condell," but returned on Sept. 2, because the passes of the Andes were blocked with snow, and remained concealed in the Argentine legation, where, on Sept. 19, he took his own life (see OBITUARIES, FOREIGN). The vengeance visited on Balmacedists by the mob was not countenanced by the new Government, which sought to restrain lawless violence. One of the Dictator's ministers, Aldunate, was murdered by his escort at Quillota. The military authorities, after the capture of Valparaiso, asked for the surrender of the military and civil officers of Balmaceda's Government who had escaped to the foreign vessels, but the American, German, and English naval commanders refused.

Rule of the Junta.—When the Provisional Government was established in Santiago the United States, Germany, and the other foreign countries formally recognized it as the *de facto* Government, and received its accredited diplomatic representatives. The internal administration was got into working order after some disturbance in Coronel and other places. Balmaceda's officials were dismissed, and many of the old ones reinstated. One of the first acts was to restore the judges, who had all been removed unconstitutionally by Balmaceda, because they would not give legal sanction to his irregularities. The acts of confiscation carried out by the Dictator's officers were required by the confiscation of their property. Balmaceda's issues of paper money, amounting to 27,000,000 pesos, held largely by the banks, presented a troublesome problem. To avert a financial panic, the Junta decided to recognize certain issues and to assume the forced loans raised from the banks by Balmaceda, which amounted to 9,000,000 pesos. A general election for Senators, Deputies, municipal officers, and presidential electors was ordered to be held in the middle of October. Two months before his fall, Balmaceda had transferred from the treasury vaults to the British war vessel "Espígle" silver bars weighing 30 tons, of the value of \$1,000,000, which the gunboat conveyed to Montevideo to be consigned to England in payment

for an Italian vessel in Montevideo and for Armstrong guns. As this was the property of the state and part of a specific reserve created by law, the Junta obtained an injunction in the English courts while it was still on the sea. The Cabinet of the Provisional Government was completed by the accession of Augustin Edwards as Minister of Public Works and Manuel Alatta as Minister of Foreign Affairs. This formed a coalition of all the political parties except the Balmacedists. Minister of Justice Errazuriz issued many orders for the arrest of persons accused of having participated in acts of pillage, in flogging or torturing friends of the Junta, in violating the mails, in the massacre at Los Caños on Aug. 18, in the shooting of Cummings, and other outrages committed under Balmaceda's Government. In the elections in October the Liberals and Radicals, united under the name of the Liberal party, obtained a majority of 21 to 5 in the Senate and of 56 to 38 in the Chamber of Deputies. The Liberals and Conservatives were the only parties. The new Congress assembled on the last day of that month. Waldo Silva was re-elected Vice-president of the Senate and Barros Luco President of the Chamber. The Council of State having been constituted without giving representation to the Conservative party, Minister of the Interior Irrarazaval and Minister of Agriculture Joaquin Walker Martinez offered their resignations. Afterward arrangements were made for the inclusion of their party, in consequence of which they consented to retain their portfolios. Conventions of both parties nominated Admiral Jorge Montt to be the next constitutional President, and he was elected by the electoral college in November. Pending his formal election and inauguration on Dec. 26, he was empowered by Congress to assume all the authority of Chief Executive.

Difficulties with the United States.—During the civil war the partisans of the Junta conceived an idea that Patrick Egan, United States minister in Santiago, was hostile to their cause, and that the Government at Washington acted in an unfriendly manner in the "Itata" incident and in withholding the recognition of belligerent rights. Animosity toward the United States has been felt from the time when Chilean miners were driven out of California, and was revived by the attitude of the American Government during the Peruvian war, when it exerted its influence to prevent the annexation of the nitrate provinces. English influences contributed to the misconstruction of Minister Egan's pacific exertions and correctly neutral conduct. The prejudice against Mr. Egan and the country that he represented afterward moderated when it became known that throughout the war he had harbored in his house Augustin Edwards and other hunted chiefs of the Opposition. During the period of reconstruction, before the passions of the war had abated and when the authority of law was still in abeyance and public order constantly disturbed, it was remembered that Mr. Egan's dispatches to his Government belittled the rebellion and magnified Balmaceda's strength, and the anti-American feeling was intensified through his demand for a safe conduct for the Balmacedist fugitives who found an asylum in the legation, which was refused by

the Junta, although supported by the Spanish and other ministers in Santiago. Special animosity was entertained toward the American naval officers and sailors, because they were believed to have communicated military intelligence to Balmaceda's army. The "Baltimore" really performed an important service for Balmaceda in assisting agents of the American Cable Company to cut the cable at Iquique, closing telegraphic communications with the insurgents and opening a connection with Valparaiso.

On Oct. 18, when two boats' crews from the "Baltimore" and other American sailors were ashore, an altercation arose between Chilean sailors and some of the "Baltimore's" men in a drinking saloon, and one of the Chileans was knocked down. The Americans were then assaulted with knives and other weapons, and when they boarded a street car they were pursued by a great mob and were dragged from the car. The affair grew into a riot. Chilean sailors and police constables interfered to protect the men from the fury of the armed mob, though certain members of the police guard were said by the sailors and other witnesses to have joined in the attack, and to have used their weapons on the unarmed strangers.

Charles W. Riffin, boatswain's mate, who was believed to be the man that struck the Chilean, was shot, and died in the arms of Petty Officer Johnson, who thought that the shot was fired by a policeman. More than a hundred armed men fell upon the sailors when they were dragged off the car. George Panter, Patrick McWilliams, and William Turnbull, coal-heavers, David W. Anderson, painter, John Hamilton, carpenter's mate, John W. Talbott and Francis D. Williams, apprentices, and John H. Davidson, landsman, were assaulted with clubs, stones, and knives. Anderson, Turnbull, Panter, Davidson, and Hamilton received dangerous stab wounds in the back. About fifteen were slightly injured. Turnbull subsequently died of his injuries. American sailors not of the party that began the affray were set upon in various parts of the city. The police finally suppressed the riot and arrested all who were suspected of having a part in it. The Chilean disturbers easily concealed themselves, only three being arrested at the time. American men-of-war's men, being in uniform and having no place to escape to, were arrested wherever seen, thirty-six in all, and while being taken to jail and after they were there they were subjected to ill treatment. Apprentice Williams said that a mounted policeman placed catgut nippers around his wrists and then spurred his horse, throwing the prisoner down. Quigley, a coal-heaver, while trying to escape from the mob, was struck by a police officer with a sword. Hamilton, dangerously wounded, was dragged to prison, and one of his mates was threatened with a clubbed musket for trying to relieve him. At the prison the sailors were made to sign a paper, and when Rhinehardt, one of the prisoners, asked its meaning, he was told that it was a formal declaration that the signer was not engaged in the trouble. Commander W. S. Schley, of the "Baltimore," ordered an investigation, the results of which he telegraphed to Washington on Oct. 22. On receipt of his report, President Harrison consulted with the

Secretaries of State and of the Navy, and on the day following a dispatch was sent to Minister Egan, in which he was instructed to demand of the Chilian Government, which had expressed as yet no regret or purpose to investigate or bring the guilty parties to justice, whether it possessed qualifying evidence or could give any "explanation of an event which has deeply pained the people of the United States, not only by reason that it resulted in the death of one of our sailors and the pitiless wounding of others, but even more as an apparent expression of unfriendliness toward this Government, which might put in peril the maintenance of amicable relations between the two countries." The dispatch concluded with a demand for reparation. The attack on American sailors, which was regarded in Washington as a national insult, since they wore the uniform of the American navy, occurred at a time when the relations between the two governments were already strained through the action of the Junta with reference to the refugees sheltered by Minister Egan. The provisional authorities not only refused to grant safe conducts for these men, but demanded their surrender on the ground that they were criminals, and when the American minister would not give them up a guard was placed near his house and persons going in and out were arrested, among them three American citizens.

The "Yorktown" and "Boston" were ordered to Chili to back up the demand for satisfaction. The reply of the Junta was that the Government of the United States formulated demands and advanced threats that were not acceptable, and could not be accepted in the present case nor in any case of like nature; and that the affair would be investigated and dealt with according to the procedure of the municipal law of Chili, but that the results of the inquiry would be communicated to the United States Government, without recognizing, however, any right of intervention in the course of justice. This reply, couched in terms so offensive that no answer was returned, coupled with the refusal of Judge of Crimes Foster, who conducted the secret preliminary examination, to allow American officers to be present, gave rise to fears of severely strained relations between the two nations that might end in a diplomatic rupture, possibly in war. Judge Foster subsequently consented to the appearance of an officer of the "Baltimore" at the secret inquiry, and agreed to furnish the American representatives with copies of all the depositions. Before taking any action in the matter, the United States Government waited to give the Chilian Government time and opportunity to communicate the results of the judicial investigation and to reply in pertinent and satisfactory terms to the representations contained in the American note relating to the incident. If these expectations should be disappointed, or if further needless delays should ensue, President Harrison, in his annual message, announced his purpose to bring the matter to the attention of Congress in a special message. The Procurator found three Chilians guilty of stabbing Americans, and Davidson guilty of assaulting a Chilian. After his inauguration and the reconstitution of the Cabinet, President Montt directed Minister Montt to withdraw Matta's note.

CHINA, an empire in eastern Asia. The reigning sovereign, Kwangsu, born in 1871, was proclaimed Emperor on the death of Tungchi, on Jan. 22, 1875, and assumed the government personally in March, 1887, when he became of age, but first took the direction of affairs in February, 1889, when he married and the Empress Dowager, who had acted as Regent during his minority, retired.

Area and Population.—The area of the eighteen provinces forming China proper is estimated at 1,297,990 square miles and the population at 383,000,000 souls. The outlying dependencies, exclusive of Corea, are Manchuria, with an area of 362,310 square miles and about 12,000,000 population; Mongolia, of which the area is 1,288,000 square miles and the population 2,000,000; Tibet, having an area of 651,500 square miles and about 6,000,000 inhabitants; Jungaria, covering 147,950 square miles, with 600,000 inhabitants; and eastern Turkestan, occupying an area of 431,800 square miles, with a population of 580,000. The Confucian religious system is generally accepted among the Chinese, though there are multitudes of Buddhists and many adherents of Taoism. The Roman Catholic Church counted in 1881 1,092,818 converts, ministered to by 41 bishops, 664 European priests, and 559 native priests. The Protestant Christians were estimated in 1881 at 19,000 and in 1887 at 33,750. The number of foreigners residing in the open ports on Jan. 1, 1890, was 7,905, of whom 3,276 were British subjects, 1,061 Americans, 794 Japanese, 596 Germans, 551 Frenchmen, and 348 Spaniards. About half of them were resident at Shanghai.

Finance.—The total receipts of the imperial treasury from the land tax, the grain tax, and duties on salt, customs duties, and other imposts are supposed to amount to \$125,000,000 annually. The land tax, partly payable in silver, yields about 20,000,000 haikwan taels. (The haikwan or customs tael is a weight of silver of the value of \$1.17.) This tax varies from 75 cents in the north to \$3.25 in the south per acre. The maritime customs, which are under European supervision, amount to 23,200,000 haikwan taels a year. This includes the *likin* or internal transit duty on opium, which can be commuted and paid in at the port of entry according to the new convention with Great Britain. The rice tribute is estimated at 2,800,000 taels a year, the salt tax at 9,600,000 taels, the native maritime and inland customs at 6,000,000 taels, transit duties on opium and other foreign and native products at 11,000,000 taels, and license fees at 2,000,000 taels. The annual expenditure on the army is about \$75,000,000.

The foreign debts of China are £627,675, borrowed at 8 per cent. in 1874, and £1,604,276, borrowed in 1878 at the same rate of interest, both loans being secured on the customs revenue; a silver loan of £1,505,000 raised in 1884; loans amounting to £2,250,000 contracted in 1886; and one of £250,000 obtained in Germany in 1887.

The Army.—The Chinese Empire is divided into five military districts, corresponding with political divisions, viz.: Manchuria, the eighteen provinces, Chinese Turkestan, Mongolia, and Tibet. The Manchus or soldiers of the Eight Banners, forming the old imperial army and en-

dowed with special privileges, number about 288,000, of whom only about 90,000, including the Pekin garrison of 13,000 men, can be counted on for effective service in war, being drilled in the European manner and armed with modern firearms. The troops of the eighteen provinces, the Green Flag or Chinese army, numbers 539,000; but of these not more than 98,000 *yuns* or volunteers and 161,000 *hjan-djuns* are effective. The capital province of Pechili is defended by 99,000 soldiers, all well trained, with 581 cannons, of which 245 are of the patterns now used in war. In the province of Kwangsi and on the island of Formosa are strong bodies of instructed and disciplined troops provided with a superior armament.

The frontier provinces of eastern Turkestan, Ili, and Tarbagatai are guarded by 30,000 soldiers, of whom 8,100 have received military instruction. Mongolia has its own militia, numbering 117,000 men, and Tibet its two bodies of militia, numbering 64,000 men, including 14,000 cavalry; but of both bodies only 30,000 men are kept under arms. According to these estimates, the total numerical strength of the Chinese army is 1,088,000 men, of which number not more than 387,000 could perform service in case of war.

The Navy.—The Chinese Minister of Marine began the reorganization of the war fleet on European lines in 1885. The three squadrons—those of Canton, Foochow, and Shanghai—were then ordered to be combined to form the squadron of the north and that of the south. The Northern or Pei-Yang Squadron consists of 3 large ironclads, 2 small ironclads, 2 cruisers, 11 gunboats, 4 torpedo cruisers, and 27 torpedo boats. The Nan-Yang or Southern Squadron is still in process of formation. There are 9 cruisers, 3 gunboats, and 9 dispatch boats in the Foochow squadron. The Shanghai flotilla has an armor-clad frigate, a gunboat, and several wooden monitors, and the Canton flotilla consists of about a dozen river gunboats.

Commerce and Production.—The value of the imports, as returned by the Bureau of Maritime Customs for 1889, was 110,884,355 *haikwan* taels, and the value of the exports 96,947,832 taels. The direct imports from Great Britain were 21,167,357, and the exports to Great Britain 15,656,907 taels; the imports from Hong-Kong 63,371,081, and exports to Hong-Kong 35,186,644 taels; imports direct from India 7,906,579, and exports to India 1,089,965 taels; imports direct from the United States 3,805,064, and exports to the United States 7,084,121 taels; imports from Russia 766,170, and exports to Russia 7,289,322 taels; imports from other European countries 2,205,988, and exports to those countries 17,533,707 taels; imports from Japan 6,601,883, and exports to Japan 6,469,030 taels. These figures include both the imports and exports of the open treaty ports and the junk trade of Hong-Kong and Macao with the south of China, which is declared at the custom houses of Kowloon and Lappa.

The imports of cotton goods in 1889 had a total value of 36,135,596 *haikwan* taels, of which 13,019,000 taels represent cotton yarns; imports of opium, 30,444,869 taels; of metals, 6,728,394 taels; of rice, 6,021,000 taels; of *beche de mer* and other sea products, 4,508,937 taels; of woolen

goods, 3,075,476 taels; of kerosene oil, 2,875,400 taels; of coal, 2,376,777 taels; of timber, 2,354,000 taels; of raw cotton, 1,213,349 taels. The quantity of tea exported fell off from 2,167,552 piculs of 133½ pounds in 1888 to 1,807,308 piculs, of which 603,738 went to Great Britain, 296,148 to the United States, 130,405 to Hong-Kong, 139,623 to Australia, and 536,494 to Russia. The value of the tea exports was 28,257,000 taels, falling a little behind the figure for raw silk, which was 28,257,000 taels. Silk manufactures were exported of the value of 7,760,000 taels; cotton, 5,045,000 taels; sugar, 2,723,062 taels; straw goods, 2,033,775 taels; clothing, 1,709,591 taels; paper, 1,422,825 taels; mats, 1,241,000 taels; fireworks, 1,215,000 taels; chinaware, 638,428 taels. Of the total imports, agricultural products made 40 per cent.; fishery products, 2·8 per cent.; forest products, 2·5 per cent.; mineral products, 1½ per cent.; and products of industries, 43·7 per cent. Of the exports, 45 per cent. consisted of agricultural, 35·8 of animal, and 19·2 of industrial products.

The report of the Maritime Customs for 1890 shows an increase of the imports to 127,093,481 taels, while exports declined to 87,144,480 taels. The decline was due to inundations and the increased competition of India and Ceylon in the tea trade; while the increase of 14 per cent. in the imports was owing to the rise in the gold value of silver, which acted also as a deterrent of exportation. There was a much greater import of rice. The import of cotton goods increased 25 per cent. The consumption of Indian yarn expanded in a remarkable degree, the imports rising from 678,558 piculs in 1889 to 1,081,495 piculs, valued at 19,300,000 taels. The export of tea fell off to 1,665,396 piculs, valued at 26,663,450 taels. Silk, raw and manufactured, declined from 36,401,967 to 30,255,905 taels. The duties collected by the Maritime Customs in 1890 were 21,996,226 taels.

Navigation.—In 1889 there were 29,145 vessels, of the aggregate capacity of 23,517,884 tons, entered and cleared at the ports of China. Of these, 24,604, of 22,684,132 tons, were steamers. Of the total number 15,763, of 14,903,750 tons, were British; 9,427, of 6,020,526 tons, Chinese; 2,656, of 1,582,648 tons, German; 528, of 441,667 tons, Japanese; 179, of 269,002 tons, French; and 178, of 75,077 tons, American.

Communications.—The coal railroad from the mines at Kaiping to the head of navigation on the Petang was continued by way of Taku to Tientsin, the total length being 86 miles. The order to extend it to Tungchow, near Pekin, was rescinded, and nothing has yet been done to carry out the great scheme for a strategic railroad from Pekin to Hankow, on the Yangtse-Kiang, which was approved by the Emperor in 1889. The net of telegraphs connects the capital with all the ports and the chief centers in the interior.

Anti-Christian Riots.—The enmity of the Chinese toward Europeans springs not merely from race antipathy and superstitious prejudice. The natural animosity that is felt in all parts of the world, especially among the ignorant classes, against people alien in race and civilization, is intensified in China by intelligent motives of self-interest arising from the treaty rights and

privileges secured to Europeans as the result of victorious wars and enforced by gunboats. The presence of Europeans has caused a great increase in the imperial taxes, and for every outbreak of mob violence against the "foreign devils" a heavy indemnity is exacted from the offending district. Before the French and British governments assumed the protection of missionaries and made their grievances a plea for demanding humiliating concessions, the Roman Catholic missionary orders made thousands of converts; since the missionaries were made a counter in the political and commercial game and, relying on being backed by armed force, assumed offensive airs of authority, their labors have not been fruitful, and they have provoked many riotous attacks, ending usually in the destruction of their churches and mission buildings, which have been rebuilt on the demand of the European diplomatic representatives at the cost of the native community. The Christian converts are not respected or liked by the Chinamen who cling to the ideas and civilization of their fathers, and they become an outcast class, and continue so even when they have fallen away from their Christian teachings. The Taiping sect was largely composed of descendants of Christian converts, and since the great rebellion conservative Chinamen have regarded with anxiety the prospect of a spread of Christianity and of European influence and civilization. The anti-foreign sentiment is strongest in the places where Europeans have most recently made their appearance, and where a disturbance of the customary channels of trade and the professions by which people gain their living is anticipated from their competition and the introduction of steamboats and other modern inventions. Ichang and the other treaty ports on the Yangtse river are the only places in the interior of China in which Europeans other than missionaries are permitted to reside and carry on business. The people of the river towns have been exasperated lately by the persistent demands of the English Government to have Chungking, the commercial capital of the great province of Szechuan, made an open treaty port. The Chinese authorities resisted this claim for years, denying that the Chefoo convention required them to open that town to trade or the Yangtse to foreign vessels beyond Ichang. The place was nominally opened and a custom house inaugurated at last on March 1, 1891, though the fear of mobs still prevents the English from taking advantage of it, for they have obtained no concession of wharves and building sites and have agreed not to run steamboats in the upper river. The populace in the Yangtse valley in 1891 was in a condition to be easily excited against the Europeans or against the Government that had shown complaisance to foreign demands. The foreign tea trade had been taken away from them by the great planters of Assam and Ceylon, causing an increasing amount of idleness and distress year by year, and in this year a drought had prevented the farmers from raising crops and deprived farm hands of work.

This country, in which these special conditions worked together to cause a recrudescence of the anti-foreign spirit, had been the theatre of some of the chief conflicts of the Taiping war, and

the army that put down the rebellion was largely drawn, as is the Chinese army to-day, from the rude and truculent peasantry of the Yangtse country, and particularly from the great province of Hunan. In Hunan was founded, about fifty years ago as a mutual benefit and protective association, a secret order called the Kolao Hui, which was composed in the beginning entirely of active and discharged soldiers of the Chinese army. This society attained great power among the soldiers engaged on the imperial side during the Taiping rebellion. Its chief object was to protect them from the plunder and extortion of the civil officials, who used them, as they do now, to embezzle money appropriated by the Central Government for the pay and maintenance of troops. Authorities who ill-treated the soldiers incurred the vengeance of this secret society. Some were assassinated, others had their houses or property destroyed, or sometimes their punishment consisted in sudden and turbulent disorders that were incited in their districts for the mere purpose of bringing about their official disgrace. Oaths and ceremonies characteristic of Chinese secret societies were gradually introduced, such as killing a cock and drinking its blood in wine at initiation, and the importation of the supernatural by reading the oracles traced by a pencil suspended from a board and moved involuntarily by superimposed hands. As the society grew in size and came to admit civilians, as well as soldiers and officers, the scope and purposes were enlarged, though its original military objects were not lost sight of; and it preserved its secular character, keeping free from the religious tendencies that distinguish some of the great secret societies, and thus inclining the more readily to political activity. Like others of these bodies, it entertained a strong hostility toward foreigners, and has long been known to be specially antagonistic to Christians and missionaries, probably owing to its traditions in connection with the Taiping rebellion. The persecutions of the Jesuit priests and their congregations in Yunnan and Szechuan have been attributed to the machinations of the Kolao Hui. The society is supposed to have a membership of 40,000,000. Its ramifications extend into all parts of northern and central China. It has representatives in all classes, even among high-placed mandarins. Powerful viceroys have endeavored to crush it out, but it has continued to spread and flourish, owing to the corruption and timidity of local officials. In troubled times it is suspected of anarchistic and anti-dynastic plots, and then the detection of a ticket of membership is followed by the immediate execution of the holder. Apart from political objects, the association has a criminal character, for members are sworn to avenge one another's private wrongs. When Chinese officials give offense to the people, it is a common practice to compel them to amend their faults by producing riotous disturbances that have no immediate connection with the question at issue. Any matter on which the mind of the mob can be easily inflamed will accomplish the object. The Kolao Hui has recently had a special grievance in the discontinuance of a pension of 50,000 taels a month that has been distributed since 1864 among the veterans of the Taiping war by the Kiangnan viceroy.

Whatever was the inciting cause, a series of disturbances that could only be due to a widespread conspiracy occurred in the valley of the Yangtse-Kiang in 1891. The avowed object was to drive the missionaries out of the country. The Kelao Hui was suspected both by the Europeans and by the Chinese authorities to be the only agency by which such disorders could be instigated in places far apart. The ultimate object was supposed to be to drive Europeans away from China and revoke their treaty rights. There was a suspicion that the conspirators even aimed at the overthrow of the Manchu dynasty, either for the more effectual banishment of the barbarians, to whom the ruling powers at Peking were too deeply committed, or for the accomplishment of the designs of ambitious statesmen, or the realization of the dream, which has more than once cropped out in troubled times, of the restoration of native Chinese rulers.

When it is the object of agitators to incite the Chinese mob to attack the Christian missions, it is only necessary to revive an old slander that is readily swallowed by the ignorant, and even by some who make pretensions to education. It is a common belief that the Catholic fathers procure Chinese babies for the purpose of compounding a medicine of their eyes and other parts of their bodies. That the missionaries receive deserted and sick children into their orphanages is a fact within the knowledge of all. Among these children the mortality is necessarily great, and the fable has arisen from the fact that many children have died and never again been seen by inquiring relatives. The Catholics seclude their pupils and keep their methods of instruction out of the public view, and this secrecy gives greater currency to the report. The Protestants, who have been less successful in their missionary efforts, say that their rivals rescue children from infanticide and neglect not purely from humane motives, but because each child adds one to the list of converts that they can report to their superiors in Europe.

At the bottom of all anti-foreign outbreaks in China have always been men of the numerous literary class, expectant officials who have passed the lower examinations and hope by causing the displacement of functionaries to obtain offices, and who hate Christianity because it diminishes their influence over the people.

The first outbreak of fanaticism occurred early in May, 1891, at Yangchow, where a mob destroyed the property of the Roman Catholic mission. This was followed by a more serious disturbance on May 12 and 13 at Wuhu, a treaty port of 100,000 inhabitants on the lower Yangtse, about 60 miles above Nankin. This is in the ecclesiastical province of Kiangnan, covering 243,000 square miles, where the French Jesuits have 102 missions, with 110 priests and a Catholic population of 100,000, which is less than 1 to every 700 inhabitants. In Wuhu the jealousy of the people toward the priests is the liveliest because the latter have acquired much of the best real estate and wharves, for which they collect high rents. Secret agents started a rumor that female kidnappers had been detected in abducting children with the aid of stupefying drugs and even of magic and bringing them from distant places to the Wuhu mission. Par-

ents were said to have gone to the mission and there discovered human bones and other evidence of the ghastly crimes charged against the missionaries. Placards were posted in public places giving circumstantial details and the names of parents who had lost their children. The converts were said to be bribed to join the churches, otherwise they would not commit such a breach of morality and custom as to sit, both sexes together, in the congregations.

A few days before the riot an anonymous letter was sent to the priests demanding the surrender of certain children that they were accused of having stolen, on pain of having their orphanage burned down. They applied to the *taotai*, or local governor, for protection, and he gave them a guard of soldiers. All that there were in the place was 50, although the officials received money for the pay and maintenance of ten times as many. On May 10 two Chinese nuns were arrested on the charge of having drugged two children, depriving them of the power of speech. On May 12 a woman presented herself at the gate of the mission and began screaming that her child had been murdered. In a short time a mob of 10,000 people gathered about the mission buildings. The French priests were roughly handled, but allowed to escape. The buildings were sacked and burned. Then they tore up the graves in the Christian cemetery in search of evidence of the murderous practices of which the priests were suspected. The small guard of soldiers could not prevent the destruction of the new cathedral and all the buildings. The *taotai* issued a manifesto warning the people to disperse, and was answered by a fresh placard accusing him and the military commander of accepting Christian bribes and being in league with the barbarians. The mob had acted thus far within the prearranged programme, which they exceeded when they destroyed the dwellings of the other European residents and attacked the custom house, where the Europeans of the town had taken refuge. The men stood a siege, keeping guard with firearms during that and the following day. At one time they charged into the crowd with bayonets. The British consulate was looted, and the consul and his wife escaped with difficulty in disguise. The arrival of 3 Chinese gunboats that were escorting a viceroy to his province put an end to the disturbances. The Chinese officer landed 250 marines, who fired blank cartridges, scattering the mob, and preserved order until a French vessel came to relieve them. The *taotai* issued a proclamation in which he called upon people who found that the Christian institutions steal children to lay the matter before the proper judicial authorities. Three days after the riot a violent incendiary placard invited the people to rise in their tens of thousands on the 20th and complete the destruction of all the Catholic and Protestant mission property and churches in the district, and allow none to be rebuilt. Before the end of the month riots occurred at Tanyang, Wuhshih, Nankin, and other places on the Yangtse river, the object in all cases being the destruction of mission buildings. At Nankin a mob destroyed some of the Catholic buildings on May 25, and then set fire to the girls' school of the American Methodist mission. The action of the military

soon checked the disorder there, although the viceroy, Liu Kung-yi, seems to have taken little interest in preserving order. The missionaries had all fled by steamer, having been warned by the authorities. At Wuchen, on Lake Poyang, the property of both the Catholic and the Protestant communities was destroyed by fire. At Wusih, near Suchow, the French church and orphanage were razed to the ground. In a riot at Takatang the troops that were sent to quell the disturbance joined the mob. Riots took place also at Nganking, where the priests defended themselves successfully, and at Wuchow. At Tanyang the old French church that had stood for two hundred years was burned and the Christian cemetery dug up. The mandarin when he attempted to stop these proceedings was maltreated. At Hochow the mob was dispersed by soldiers. Not fewer than 10 missionary establishments in the provinces of Anwei, Kiangsu, Hunan, and Szechuan were utterly destroyed, their churches, orphanages, founding asylums, and hospitals burned to the ground, and their inmates compelled to flee, all within a few weeks. In none of these attacks was an attempt made on the lives of the Catholic fathers. On the contrary, the organizers of the riots seem to have taken precautions to provide them always with some way of escape. Nor in any instance were their converts molested. In other places about 20 churches, schools, and hospitals were burned or wrecked.

On June 5 a more serious outbreak occurred at Wusueh, 500 miles from the mouth of the Yangtse, situated in the vice-royalty of Chang-Chih-tung, who is Governor-General of the Hu provinces. A man appeared in the streets with four children that he had brought from a neighboring town, and openly told the people that he was carrying them to the missionary station at Kinkiang to be cut up and made into medicine. The town in a short time was in high excitement. People went to the mandarin and asked him to take the children away. This he declined to do, laughing at their story. Soon a mob of 5,000 persons collected around the English Wesleyan mission premises, and set one of the houses afire. The only male Europeans in the town, a young missionary named Argent, and the English collector of customs, whose name was Green, ran to the spot to help put out the fire. Mr. Argent, who came first, was instantly set upon and killed. The same fate was Mr. Green's, who had served in the British navy, and fought desperately until he was pierced and hacked with more than a hundred wounds. One of the mandarins implored the mob to desist, and offered his own life as a sacrifice to their vengeance. The women and children of the mission escaped to the custom house, where they were bravely defended by the Chinese employes. They had first sought refuge at the *yamen* of the head mandarin, who barbarously ejected them. The three ladies, Mrs. Prothero, Mrs. Warren, and Mrs. Boden, were murderously assaulted after they were thrown out of the mandarin's house. Two days later the premises of the American Presbyterian mission at Kiu-Kiang were attacked, but the Chinese mandarin there acted with promptitude, and placed a guard of soldiers around the mission. The American steamer "Palos" and

French and German gunboats arrived at the places where disturbances had taken place, and by their presence prevented their recurrence. The English people had been the first to ask for naval protection, but none of their numerous gunboats had been sent to the scene of the troubles. The French minister sent all the French men-of-war to the threatened ports, with orders to make a sufficient display of force, and even to fire if necessary for the protection of the French missions. The outrages put a stop to nearly all missionary work in the middle and north of China. In the course of a few days the French fathers had lost many millions of dollars' worth of property. The American Baptist and Presbyterian missionaries in the neighborhood of Shanghai and at Soochow were attacked, and by the advice of Consul-General J. A. Leonard they went to Shanghai, where the foreign residents raised and armed a strong corps of volunteers to defend their lives and property, declining a detachment of imperial troops that the *taotai* offered to furnish for their protection.

The local authorities in the beginning of the disturbances showed their usual mildness and timidity, though a few acted with prompt energy. After the riots, all took measures to prevent a repetition, posting troops to guard Christian property. The Viceroy of Nankin, within whose jurisdiction the greater part of the destruction took place, asked for powers to deal summarily with the promoters of riot and sedition, who were, he said, members of secret societies and disbanded soldiers. According to his request, the local magistrates were authorized to try persons accused of murder, incendiarism, and rioting, and to the Viceroy the Peking government delegated the power to order the instant decapitation of any one found guilty. In Wuhu two rioters were beheaded, and the magistrates were authorized to deal peremptorily with all who could be caught. The ministers of the western powers presented a collective note to the Tsungli-Yamen, and on June 12 the Emperor issued a decree commanding the governors or viceroys to arrest at once, try, and execute leaders in the riots, put down with a high hand such acts as the printing or posting of incendiary placards, and take measures to degrade all officials suspected of connivance or remiss in their efforts for the protection of Christian missionaries. The French and British representatives presented claims of indemnity for losses amounting to 6,500,000 taels. France, Great Britain, the United States, and Germany strengthened their naval forces in Chinese waters. The Government at Washington sent the cruiser "Charleston" and the "Marion," "Alert," and "Mohican" to join the "Monocacy," the "Palos," and the corvette "Alliance." Incendiary placards were posted in Foochow, where European houses are scattered and not collected in a compound near the water. No disturbance took place, and the towns on the Yangtse remained quiet, for they were guarded by 20 foreign war ships. The Chinese fleet remained away. At Peking the British, French, and German ministers, acting in concert, used pressure on the Tsungli-Yamen, demanding that secret societies should be extirpated, Hunan thrown open to foreign commerce, and all man-

darins implicated in the riots degraded. The Government could not depend on the local officials nor on the army to carry out a strong policy, and was compelled to confess that if the powers persisted in their demands they would bring about the fall of the dynasty and general anarchy. The Emperor's edict was not sent by telegraph, but by couriers. After a long delay, two persons were executed for the murders at Wusueh. No magistrate was degraded except the Wusueh mandarin, who tried to stop the riots, and offered his life as a sacrifice to the fury of the mob. Five, however, were reported to the Peking authorities for negligence. The two viceroys ruling over the Yangtse districts, after Lord Salisbury had made a menacing communication to the Chinese minister at London, settled all damages claimed, without disputing about amounts. The foreign ministers in another collective note demanded complete satisfaction, including punishment of the true ringleaders at Wuhu.

The riotous disturbances broke out again on Sept. 3, at Ichang, 600 miles from the first violent demonstration. The same marks of a deliberate plot were observable. A stranger brought an unknown child to the Catholic mission. An outcry was raised that it had been stolen, and a mob of beggars and disbanded soldiers plundered and burned some of the buildings and those of the American Protestant mission and others belonging to the few European residents, sparing only the British consulate. The mob, which was led by disguised Hunan soldiers, after obtaining a rich booty, turned their attention to the Europeans, of whom twenty escaped, not without injuries, to a steamboat. The civil and military mandarins, although they had a large force of soldiers within call, did nothing to check the outrages, but said they were powerless. No steps were taken afterward to arrest the leaders. A force of British sailors was sent on a steamer to protect the remaining buildings of the foreign settlement.

The presence of European forces on the Yangtse and the measures taken by the Peking authorities, under foreign pressure, to repress the movement suited well with the plans of its secret authors. The ferment in the Yangtse valley extended, and soon took the form of organized revolt. The Chinese Government, when threatened with naval action of the powers in the troubled districts, which portended nothing less than a joint or British occupation of the Yangtse ports, protested its ability to preserve order, and ordered the North China and Nankin squadrons to patrol the Yangtse. In Wuchang, the seat of the viceroy of Hunan and Hupeh, the neighboring city of Hankow, one of the largest in the world, and in all the centers of population, a restless spirit of sedition was observed. Anti-foreign placards were posted everywhere. An English custom-house official at Shanghai named Mason was detected in attempting to smuggle from Hong-Kong a large number of Winchester and Martini rifles and a quantity of dynamite destined for the Kolao Hui in Chinkiang. Six or seven other Europeans were arrested on suspicion of being engaged in a similar business. Among the candidates for degrees who came to Shanghai for the annual examinations circulars

were distributed accusing missionaries of shameful misdeeds and the European physicians of criminal malpractice. At Newchang, in Manchuria, Dr. Greig, an English missionary, was murdered in August, but this act was not supposed to be connected with the machinations of secret societies. In Hunan a society was organized to prevent the extension of the telegraphs and cut down the poles already erected. In the province of Fukien, at Tehhua, not far from Foochow, a serious riot occurred in October. About 8,000 insurgents attacked the town and held it for several days, until a detachment of imperial troops arrived.

When the troubles began to assume the appearance of civil war the provincial authorities proceeded with energy against the Kolao Hui. One of the chiefs of the society, Chen Kinlung, was arrested in Shanghai, and by order of the Kiunguan viceroy was put to the torture to make him reveal his secrets and accomplices, but in vain. Among the persons arrested for instigating the riot at Chinkiang were 17 Manchou officials. In Hankow two secret printing offices and a quantity of anti-Christian pamphlets were discovered.

In November a movement began in Manchuria and Mongolia similar to that in the Yangtse valley, but more portentous, because the active troops took part in it. Two Belgian priests were massacred at Taku, the missions were everywhere destroyed, and the missionaries fled to save their lives. Large numbers of native Christians were slaughtered. The local authorities, who did nothing to check the atrocities, fed and encouraged bands of insurgents and mutinous troops that marched about the country to join the main body, which grew into an army and advanced in the direction of Peking.

Secret Societies.—The Hui, or secret brotherhoods, in China have always followed revolutionary aims, and often have assumed the character of a religious sect for the purpose of cloaking their real objects. Under the Tsing dynasty open political activity has been repressed with inexorable rigor. The Tartar conquest was consummated by means of a persecution so merciless that patriots had to resort to a sign language to communicate one with another. Soon after the overthrow of the native Ming dynasty, in 1644, the oldest of the existing secret societies, the Kihing, was founded for its restoration. Patriots have never ceased to deplore the loss of the freer national life under the Chinese emperors, and no occupant of the throne has been exempt from the dread of revolution, or has failed to pursue the secret fraternities that have plotted insurrections, and once or twice have nearly compassed the overthrow of the foreign rulers. In peaceful times persecutions have ceased because they would rekindle the fires of revolution. In times of political unrest the possession of the badge of membership often costs the wearer's life, and often high officials have suddenly disappeared, doomed to death or lifelong banishment in Tartary. When a society has been nearly exterminated, like that of Peilinkoa, or the White Water Lily, which in the early part of this century, under cover of religious and vegetarian propaganda, organized revolts against the Emperor Kianking, others,

like the Kolao, have sprung up in its place. These Chinese Nihilists not only plan rebellions, but give aid and encouragement to revolts not connected with their schemes, such as the Mohammedan uprising and the insurrection of the Miaotsi mountaineers. Even robbery and brigandage are cultivated to bring about a state of anarchy that will lead to revolution. In this way the societies have sometimes degenerated into gangs of robbers and secret assassins, and been joined by people of criminal impulses or who have private grudges to wreak on their enemies, for the rule that no brother shall be betrayed to the authorities for any cause can only be broken under penalty of death. Formerly the great secret societies encouraged the propagation of Christianity, looking to Europe for aid in expelling the Manchus. The Emperor Kianking, who was compelled to keep his army constantly under arms by the White Lily Society, conceived a bitter hatred of all religious sects, which he visited most severely on the Roman Catholic Christians, causing many thousands to be put to death. Under these circumstances a natural sympathy sprang up between the Christians and the Taiping sect, composed partly of survivors of the broken Christian congregations and children of those who were massacred. In the earlier period of the Taiping rebellion European sympathy was largely with the revolution, but when the governments came to act it was to crush it and save the dynasty, exacting in return concessions that the Chinese consider prejudicial to their interests and repugnant to their national honor. Since then the secret fraternities have coupled together Europe and the Manchu conquerors, and the next great revolutionary society that sprang up in central and northern China made the expulsion of the Christians a prime article of its creed. The Roman Catholics are the special object of Chinese animosity because of the losses and humiliation inflicted by the French in the Tonquin war. This feeling is strongest in the south of China. There the Cantonese Triad Society flourishes and but few representatives of the Kolao Hui are found, and therefore the present movement has not penetrated to that region. The organization of a native militia among the Christian converts in Tonquin was the cause of an outbreak of national fury and fanaticism in southern China in 1884, and again in 1886, when the scattered Christian communities were objects of savage and murderous persecutions.

After the suppression of the Taiping rebellion the activity of the Chinese patriotic organizations was confined for many years to saving those of their numbers who fell under suspicion from the vengeance of the Government, by providing them with means to emigrate. Thus it has come about that the impulse to the anti-dynastic movement originates to a great extent in Singapore, and the Chinese papers printed there reveal the national aspirations in a way that is impossible under the stringent press supervision that has been exercised in China ever since the Manchus achieved their sanguinary conquest. In addition to the famous and widespread secret societies, there are a great many having similar purposes of minor importance. Every province has one or more of its own. The organization that had most to do with the Taip-

ing rebellion was that of the Three Societies, the Sanhop Hui. The English authorities in Singapore have several times attempted to suppress the secret societies there. In that city about ten years ago the rules of the White Lily Society were discovered, which make death the penalty for refusing to stand by a fellow-member in a quarrel, even against one's own brother, or betraying him to the police, or failing to aid him with means to escape the clutches of the authorities and flee from the country, even if one's clothing and furniture must be pawned.

The literary class takes a leading part in every movement against the dynasty, because the principles of the Tartar rule seem barbarous to the educated Chinese mind. Two or three of the Manchu emperors fostered letters, and were themselves distinguished writers. The majority have shown themselves apathetic to science and literature, and have allowed them to languish. Some have been distinctly hostile, like Kianking, who said that it was more becoming for a noble to master archery and horsemanship than to sit over books. The present *régime* seems to the Chinese a system revolting to their habit of mind, that of a military despotism. The sale of offices, resorted to in recent times to provide means for wars and armaments against Europe because the Government dared not impose taxes, has done much to make the dynasty hated.

It is supposed that a revolution to be successful must be managed by persons in power. During the present reign Chinese statesmen in the natural course of events have come to the front and prominent Manchu administrators are passing from the stage. The most powerful man in China is the aged Viceroy of Pechili, Li-Hung-Chang, who has the defense of the throne and of the person of the Emperor in his care, has organized and commands the only efficient naval and military forces, controls to a great extent the foreign relations, and has placed his friends and relatives at the head of the chief provincial administrations. His policy has been to build upon the military traditions of the Tartar rule and improve the defensive resources of the empire, in order to bear the strain of European relations and guard the frontiers from aggression.

The Audience Question.—The theory that China is the Middle Kingdom and the Emperor the rightful lord over all nations is so deeply rooted that France was compelled to accept the position of a vassal in respect to Tonquin, and Great Britain renders nominal homage in Burmah and does not even restrain the princes of Himalayan states from sending tribute to the Sun of Heaven. When European troops had possession of Peking they exacted material advantages, but did not venture to disturb the belief in the universal suzerainty of the Emperor; and when the English and French forces assisted in putting down the native rebels, the Chinese supposed it was an act of filial duty to the paternal sovereign of "all under heaven." The European envoys, after gaining admission to Peking thirty years ago by the power of the sword, found it impossible to communicate their demands and representatives to the competent authorities until fresh menaces and displays of force brought about the development of the Tsungli-Yamen into a proper medium of diplomatic action. They never

demanding the right to present their credentials to the Emperor in person, as to European sovereigns. England and the other powers have found anomalous relations with Oriental despots a practical advantage, for the international principle of the equality of states would otherwise preclude them from forcing the admission of opium, dictating a tariff, and exercising extra-territorial sovereignty. A so-called audience was granted to the foreign representatives in 1873, which was more like a review. During the minority of the Emperor the audience question could not be pressed, and while Chinese ministers in Europe were received with great honor, the diplomatic corps at Peking has been humiliated and reduced to impotence in the degree in which the military power of China has been strengthened. After the Emperor assumed the Government the European envoys began to press to be received at court, the English minister taking the lead. The Emperor was not unwilling, and the Tsungli-Yamen arranged the forms and manner of an audience, exacting in return the right, always refused before by England, of maintaining consuls-general and other consular representatives in Hong-Kong, Singapore, and other cities of the British Empire. The place and ceremonial were discussed, and some of the ministers were inclined to draw back, but they finally accepted the plan proposed by the Tsungli-Yamen. The reception took place on March 5, 1891, in the *tze kuang ko*, or audience hall, in which the Emperor receives the envoys of Corea, Annam, and other vassal states, the Chinese ministers having overcome their objections by promising that a special edifice for the reception of foreign envoys should be built without delay. They were received in a body, not singly, as they wished, by the Emperor, who replied in a set formula to the speech made by Herr von Brandt, the German minister, which was interpreted in Manchu by Prince Ch'ing, kneeling before the throne. The Chinese envoys in Europe have urged the advisability of placing diplomatic intercourse at Peking on the same footing as in Europe as a prelude to demanding a revision of the treaties and the equal treatment guaranteed by international law. A more important step than the March audience was the reception of the French and Russian ambassadors in November in the imperial palace.

CHRISTIAN ENDEAVOR, SOCIETIES

OF. The tenth International Convention of Christian Endeavor Societies met in Minneapolis, July 9. President Francis E. Clark presided. The report showed that the number of local societies was 16,274 (against 11,013 in 1890), and of members 1,008,980 (against 660,000 in 1890). The societies had been organized in 30 denominations. The five churches having the largest number of societies reported were, in their order, Presbyterian, 4,019 societies; Congregationalist, 3,545; Baptist, 2,381; Methodist, 2,068; and Disciples of Christ, 801. Three hundred and seven societies were reported in foreign countries, of which 120 were in England, 82 in Australia, 30 in India, 12 in Turkey, and 7 in China. Of junior societies, 855 were reported, and the existence of others was known. Stress was laid in the report on the interdenominational character of the societies as distinguished from undenom-

inational, and their agency in promoting the spirit of federation and Christian fellowship. All the local societies were advised by resolution to adopt what is called the "revised pledge," containing the clause, "I will make it the rule of my life to support my own church in every way, especially in attending all her regular Sunday and mid-week services, unless prevented by a reason which I can conscientiously give to the Saviour"; and the lookout committees were directed to use every effort to promote this, as well as the other requirements in the pledge. To emphasize this underlying principle, the societies were advised to submit important measures and proposed lists of officers to the pastor and officers of the church for their approval. Union with societies not connected with any evangelical church was discouraged. In reaffirming the principles of the society, prominence was given to those of the utmost loyalty to their respective denominations on the part of all the societies, and steadfast personal love and service for the local church of each, and a declaration was inserted that "Christian Endeavor interposes no barrier to the denominational control of the young people," and rejoices when denominations suggest special lines of duty or activity. The convention sermon was preached by the Rev. Dr. O. H. Tiffany. The president's address presented fidelity and fellowship as the two great factors of the society. Papers were read and discussions held at the several sessions on various topics pertaining to the history, work, objects, scope, and influence of the societies:

CITIES, AMERICAN, RECENT GROWTH

OF. This subject, begun in the "Annual Cyclopædia" for 1886, has been continued through every succeeding volume. In the six volumes—1886 to 1891—the recent progress of 360 cities is set forth.

Aberdeen, a city of Washington, the largest on Gray's Harbor, at the apex of that body of water, 16 miles from the bar, on both sides of Chehalis river, about a mile from its mouth. The northern part of the city is divided by Wishkah river, a narrow but deep stream, which affords excellent wharfage for vessels of the largest tonnage in the heart of the city, and is navigable 16 miles above its mouth. The Chehalis has a depth at Aberdeen of from 40 to 75 feet, and a width of from 2,000 to 3,000 feet. The entire water frontage of the city is over 2 miles, easily approached by two channels leading from the entrance of the harbor, one on the north and the other on the south. The harbor—named from Capt. Robert Gray, who first carried the United States flag around the world, and in 1791 discovered Columbia river, establishing the claim of the United States on Oregon—is one of the safest and most accessible on the Pacific coast. It has an area of 70,000 acres, and a depth at low tide on the bar of 22 feet. It is completely landlocked, and during the past year more than 100 sailing vessels and from 4 to 6 steamers a month have crossed the bar without accident. It is 350 miles nearer San Francisco than the cities of Puget Sound, and 600 miles nearer Oriental ports than that city. The business portion of the city has been built on tide lands reclaimed at great expense, and a short distance from the harbor the land rises by easy

grades to a height of 50 to 75 feet, spreading out into level plateaus, where the fine residence portion is being built. The Northern Pacific Railroad has division headquarters within the corporate limits, owning 22 sections of land. In 1890 the road was operating within 10 miles of the city, and there are regular lines of steamers to Portland and San Francisco. A steam ferry plies between the portions of the city separated by Chehalis river, and two bridges will shortly be erected across the Wishkah. Bonds have been deposited for an electric road to connect with Hoquiam, to cost \$100,000. Six years ago the city was a mere mill site. By the census of 1890 it had a population of 1,638. Increase is shown by the post-office receipts, which for the quarter ending Jan. 1, 1890, were \$450.96, and for that ending Jan. 1, 1891, \$908. The sum of \$50,000 was expended by the city during the last six months of the year on street improvements. Water works are being erected, at a cost of \$75,000, the supply being obtained from springs within half a mile of the city limits by the Holly principle of direct pressure. For protection against fire, water is pumped from the harbor by stationary engines running night and day, and there is a volunteer fire department of 84 members. Electric lights are in use. The enrollment in the 2 graded public schools, Oct. 30, 1891, was 272; a new central school building is to be erected, to cost \$25,000, and there is a Catholic school. The Catholics also have a hospital. There are five churches. The monthly pay-roll of manufactures aggregates \$35,000, the city having the only foundry on the harbor. From the ship-yard a large three-masted schooner was launched in September, 1890. Four saw mills have a combined daily capacity of 300,000 feet, the shipment abroad of lumber for 1890 being 33,000,000 feet, and the amount consumed at home 9,000,000. Three sash, door, and blind factories, 2 planing mills, 1 shingle mill, a cigar factory, and an ice factory are in operation; and the yearly pack of 3 salmon canneries is 41,000 cases, valued at \$73,000. There are 2 banks (1 national, with an aggregate capital of \$550,000), and a building and loan association has been organized. A weekly and a semi-weekly newspaper are published.

Akron, a city of Ohio, county seat of Summit County, in the northern part of the State, at the junction of the Ohio and Erie and Pennsylvania and Ohio Canals, 40 miles from Cleveland and 246 from Cincinnati. It is 400 feet above the level of Lake Erie, and is the highest point of the Ohio and Erie Canal. The railroads are the New York, Lake Erie and Western, the Cleveland, Akron and Columbus Valley, the Pittsburgh and Western, and the Valley. The surrounding country is fertile, and wheat is exported, together with mineral fire-proof paint from deposits in the vicinity of the city. A milling plant established at Akron in 1852 operated the first oatmeal mill in America, in 1856, with capacity of 20 barrels a day. In 1890 the total product of 5 mills owned by it was 2,500 barrels daily. A capital of \$10,000,000 is invested in 300 manufactories, water power being supplied (in addition to steam) from the Canal and Little Cuyahoga river. These include the largest match factory in the world, producing one fifth

of all the matches made in the United States, using annually 3,000,000 feet of pine lumber, 70 tons of brimstone, 17,900 pounds of phosphorus, 35,000 pounds of chlorate of potash, 30,000 pounds of glue, and 50,000 pounds of paraffine wax. Six sewer-pipe factories are supplied from inexhaustible beds of clay, long one of the chief contributions to the wealth of the city, which is vitrified, and thus rendered impervious to acid, steam, or gas. There are also 9 stone-ware works, 7 planing mills, 5 foundries, 2 galvanized-iron works, 6 brick and 2 fire-brick works, 4 boiler works, 3 breweries, 2 box, 3 soap, 1 chain, 1 church furniture, and 2 barrel factories, 2 of the largest agricultural-implement works in the United States (employing upward of 1,000 men), 2 harness-specialty factories, 4 stone quarries, 2 marble works, polishing and plating works, factories of hard-rubber goods, woolen, leather belting, wagon-gear, paper-sack, and other factories turning out machine knives, twine and cordage, flour sacks, gymnasium supplies, stoves, files, canal boats, etc. Akron was founded in 1825, and became the county seat in 1841. The population in 1870 was 10,006; in 1880, 16,512; and in 1890, 27,601. The assessed valuation is near \$15,000,000 and the tax rate in 1889 was 27.4. The debt in March, 1891, was \$111,281.83. There are 12 miles of street railway (electric, Sprague overhead system), costing \$300,000. Water is supplied from springs. The churches number 23, and there are a Masonic temple, and 14 other halls, in addition to 2 armories. Five banks, 3 of which are national, have a total capital of \$575,000, and a surplus of \$102,000; 2 savings institutions have a capital of \$150,000, and 1 savings and loan association has a capital of \$100,000. One daily paper is published, 2 tri-weeklies, 4 weeklies (1 in German, 1 semi-monthly, by the students of Buchtel College), and 2 monthlies. There are 11 public schools, including the high school, and 99 teachers are employed. The enrollment in the public schools in 1887-'88 was 4,654, and in the private and parochial schools 957. Of the last class, 3 are Catholic, 1 German Lutheran, and 1 Hebrew. Two business colleges and a school of design are flourishing; Buchtel College (Universalist), opened in 1872, has 14 professors and instructors. The streets are well laid, and the principal ones paved. There are free public libraries, 8 parks, and 2 theatres. The Ohio Canal was begun July 4, 1825, and the first boat for it was built on the lower basin near Lock One, at Akron.

Alpena, a city of Michigan, county seat of Alpena County, 120 miles from Bay City and 250 from Detroit, by water, in the northeastern part of the State, on Thunder Bay, which is an inlet of Lake Huron, 10 miles wide at its mouth, and affords one of the safest harbors on the great lakes. There are 3 lines of passenger steamers. The city is the terminus of the Detroit, Bay City and Alpena Railroad, and has notable manufacturing interests, chief among which are 14 saw mills, which in 1889 exported 219,915,000 feet of lumber, 53,936,000 laths, 36,610,000 shingles, 242,570 railroad ties, 145,000 cedar posts, and 1,000 telegraph poles. There are also 2 large engine and machine works, one of the largest sulphite fiber pulp mills in the United States (employing 75 hands), 5 shingle and 4

planing mills, 2 foundries, 1 knitting factory, 2 cigar factories, and industrial works. The population in 1880 was 6,153, and in 1890 (in three wards) 11,283, showing an increase of 83.37 per cent. The first settlement was made in 1856 at Alpena, and lumbering was begun in 1858. In 1864 there were 674 inhabitants. In 1871 it was incorporated, and in 1872 was devastated by a great fire. In 1879 water works of the Holly system were erected, with a pumping capacity of 3,000,000 gallons, the crib being placed in the bay, and the wheel (then one of the largest in Michigan) the first of its size ever constructed. The assessed valuation of the city in 1889 was \$1,034,900, and the debt was less than \$10,000. The streets are wide, and in 1890 five miles were paved and five more under way. Gas and electric lighting are in use, and there are 12 churches, 9 public-school buildings, and 8 private and parochial schools. Fishing is carried on extensively, and there is a United States fish hatchery, established in 1882, from which 30,000,000 young white fish were shipped in 1883. There are 2 national banks and an opera house. Three weekly newspapers are published, and 1 monthly.

Arkansas City, a city of Kansas, in Cowley County, near the Oklahoma border line, on Arkansas river at the mouth of the Walnut, 250 miles southwest of Kansas City, the same distance north of Fort Worth, 200 from Fort Scott, and 14 from Winfield, the county seat. It is in the center of a rich agricultural and stock-raising district, and with its 3 great systems of railroads—the Atchison, Topeka and Santa Fé, the Missouri Pacific, and the St. Louis and San Francisco—controls almost the entire trade of the Indian agencies, reservations, and military posts in Indian Territory. It is the end of a division of the Santa Fé system, and has a round-house and machine shops of that road, employing 200 men, in addition to 100 train-men and other employés. In 1880 the population was 1,012, and in 1890 (in four wards) 8,347. Water power is afforded by a canal $5\frac{1}{2}$ miles long, tapping Arkansas river 4 miles above the city and flowing into the Walnut $1\frac{1}{2}$ mile below, with fall of 22 feet. The cost of the canal was \$200,000. The manufacturing establishments in 1890 were 3 large flouring mills, 1 planing mill, 1 windmill manufactory, a mattress factory, and a chair and car-seat factory. The gas works have a capital of \$100,000, and there is an electric-light plant. There are 17 miles of water mains, 3 banks (2 national) with aggregate capital of \$425,000 and surplus of \$160,000, a hotel costing \$125,000, an opera house worth \$75,000, and 5 school-houses. Two daily and 4 weekly newspapers are published.

Astoria, a city of Oregon, the county seat of Clatsop County, on the south shore of Columbia river, 12 miles from its mouth, and about 100 miles from Portland. It is said to be the largest city in the United States without a railroad, but one is now under construction, to connect with the transcontinental lines at Portland. It was founded in 1811, and named in honor of John Jacob Astor, chief manager of the American Fur Company. After the war of 1812 it was held by the Hudson Bay Fur Company until early in the forties, when the tide of emigration set in from the Eastern States. The population in 1870 was

639; in 1880, 2,803; and in 1890, 6,184. The population of the county is 10,016. By the construction of the Government jetties at the mouth of the Columbia, a channel has been created of ample depth for the largest ships to pass in safety, and, accordingly, ocean steamers call at the port. Five or six lines of steamers owned in Astoria ply daily to and from ports on the rivers and bays in the vicinity, three lines of bar tugs have headquarters here, and lines of steamers also run to San Francisco and Puget Sound. One line, owned by the Union Pacific Railroad, runs between the city and Portland. Astoria is the headquarters of the salmon fisheries of the Columbia. The sum of \$1,300,000 is invested in the industry, the product of which in 1889 was \$1,416,177. More than 3,000 fishermen are employed, having 1,500 boats and nets; while the canneries give occupation to 2,000 persons, the majority of whom are Chinese. The water front of the city measures 6 miles. To reach deep water, docks and warehouses have been constructed several hundred feet out from the shore, and the business streets are crowded down as close to these as possible. Several streets are built on piles, and blocks of stores, residences, hotels, and street railroads are constructed over the water. The buildings are mostly of wood, and where brick is used the foundations are of stone and cement, placed on piles driven to a great depth and cut off below the water line. In this part of the city no sewers are required, the tide carrying away all refuse. Residences, churches, and other buildings are extending back on the hills, and streets are being graded up steep inclines. Clatsop County is about 30 miles square, and contains but one township of open land, the rest being heavily timbered with Oregon pine, spruce, cedar, larch, hemlock, maple, and cottonwood. Only along the streams are the forests largely cut. Three saw mills have a daily aggregate capacity of 150,000 feet, and manufactured lumber is shipped east. By sea it is sent to California, Mexico, South America, and China. On Young's river is a pulp mill, with a capacity of 1,380 tons annually. A capital of \$85,000 is invested in ship-building; \$575,000 in manufacture of lumber, with output of \$700,000 yearly; and \$39,000 in sash and door factories, the annual output of which is \$33,000. The capital in foundries and machine shops is \$90,000, with a product of \$125,000; in manufacture of beer and ice, \$25,000, yearly product, \$75,000. In addition to an electric-light plant, there are gas works. Exclusive of the two last and the pulp mill, the annual product on the total amount of capital invested (\$844,000) is \$1,018,000. Coal exists in the county, but no mines have been opened. Potter's clay, iron ore, and jet are its other mineral resources. Of 10 church buildings in the county, 8 are in Astoria—viz., Methodist, Congregational, Presbyterian, Baptist, Episcopal, Roman Catholic, and 2 Lutheran. The city has also 3 large public schools and 1 Episcopal parish school. There are 2 daily newspapers, and 4 banks—2 national, with a capital of \$300,000. The possession of Astoria was the principal point in the claim of the United States to Oregon.

Aurora, a city of Illinois, in Kane County, in the northeastern part of the State, 37 miles from Chicago, on Fox river, which flows with a rapid

current through the heart of the city, and furnishes an ample water power. Aurora was founded in 1834, and in 1850 had a population of 2,000. In 1857 it was incorporated; in 1860 it had a population of 6,000; in 1880 of 11,873; and in 1890 of 19,688, showing an increase in the decade of 65.82 per cent. Six lines of the Chicago, Burlington and Quincy Railroad center here; also the Chicago and Northwestern, and the Belt Line, or Elgin, Joliet and Eastern. The city was the first in the West to adopt electric lighting, and owns its plant. Gas works were established in 1868, which in 1890 owned 33 miles of mains, and made arrangements for erecting a fuel gas plant to furnish gas at 40 cents a thousand. The water works, erected in 1885-'86, are valued at \$204,446, and in 1890 had 25 miles and 90 feet of mains. Five steel bridges, 2 belonging to the railroads, cross the river, the longest having a total length of 720 feet. In addition to the high school there are 10 public-school buildings. The school enrollment is 3,358; 72 teachers are employed. Jennings Seminary has as adjuncts a normal school and a business college. There are also a parochial school, a Catholic academy, and 2 German Evangelical Lutheran schools. Five national banks have a capital of \$600,000, and a surplus of \$68,000; and there are 2 building and loan associations. Five daily newspapers are published, and 4 weeklies, 1 in German. The total valuation of property of 22 churches is \$492,600, and the Young Men's Christian Association owns its buildings. The sloping banks of the river furnish excellent drainage. A Driving-park Association was organized in 1889, and has a fine tract of 26 acres within the city limits. The city horse railway was purchased in 1890 by an electric company, which adopted the Sprague overhead system. The total value of city property is \$574,205.73. The City Hall is a fine building, and Memorial Hall, erected by the Soldiers' Monument Association, contains the public library. The City Hospital has a new brick building costing \$9,000, and there is an orphanage founded by private benevolence. The sum of \$75,000 has been appropriated by Congress for a Government building. The shops of the Chicago, Burlington and Quincy Railroad, erected in 1855-'56, at a cost of \$120,000, exclusive of machinery, embrace locomotive works, car shops, and a chemical and physical laboratory; 1,500 men are employed, with a monthly pay-roll of \$60,000. The other industries include iron works, one of the largest factories of wood-working machinery in the United States, a silver-plate company, a sash, door, and blind factory, stove works, cotton mills, a corset factory employing 600 hands, agricultural-implement works, a factory for well-sinking machinery, a foundry and machine shop, a watch factory, a smelting and refining company, 2 factories of door-hangers, carpet-sweepers, patent oil-cans, etc., a carriage factory, road-cart works, and a large-wheeled scraper company.

Bay City, a city of Michigan, the county seat of Bay County, on Saginaw river near its mouth, in Saginaw Bay, 143 miles from Toledo, Ohio, and 121 from Jackson by rail. The population by the census of 1890 was 27,839 (in 11 wards), showing an increase of 7,146 over 20,693 in 1880. In 1887

an act was passed by the Legislature of Michigan enabling the consolidation in 1891 of Bay City proper, West Bay City, and Essexville village. The last two, in 1890, had populations respectively of 12,981 and 1,545. The total population of Bay County in 1890 was 56,412, and in 1891 the assessed valuation of property, real and personal, was \$27,000,000. The first settlement of Bay City was made in 1838, and in 1858 the county was organized and it became the county seat. In 1867 the first railroad was built. Transportation is now afforded by 3 lines, and in 1887 the city owned 119 craft, aggregating over 28,732 tons, and valued at \$1,500,000. The same year the total value of city property was \$780,586.96, and its bonded debt was \$367,000. The tax rate was \$1.84. In 1891 there were 30 miles of well-paved streets and 50 miles of county (macadamized) roads. Water works of the Holly system were erected in 1872, and in 1886 a Gaskell compound engine was added, making the total quantity pumped during the year 779,761,852 gallons. The value of the water works in 1887 was \$426,773, and there were more than 24 miles of sewers. Two free bridges span Saginaw river. The fire department property is valued at \$57,076, and the electric-light plant at \$31,583. The gas company was organized in 1868. The sum of \$63,600 has been invested in public parks. The school property in 1887 was valued at \$177,500; 3,836 children were enrolled, and 76 teachers employed in 10 public-school buildings. There was an enrollment of 230 also in the high school. There is also a commercial college. In Bay City proper there are 21 churches, and in West Bay City 8. Five banks, 2 of which are national, have an aggregate capital of \$750,000, and a surplus of \$240,000. Three daily and 4 weekly newspapers are published. A handsome opera house was erected in 1886. The depot of the Michigan Central Railroad includes two buildings, and is 286 by 50 feet, and three stories high, with a tower 104 feet. The Masonic Temple, Crapo Block, and Trinity Church, the last costing \$60,000, are notable. There is a court house and a public library. The leading industries are ship-building, lumber, salt, and fish. The first ship-building on Saginaw river began in 1848; and to 1887, 57 propellers had been built, 6 side-wheel steamers, and 45 tugs, as well as schooners, scows, and barges. Since 1886, by report of the United States Census on transportation, a revolution has taken place in the material and structure of floating equipment on the Great Lakes, probably more rapid and complete than any other in the history of marine architecture. The total tonnage of Bay City in 1889 was 553,219 tons, of which 486,973 were shipments and 66,246 receipts. The first saw mill was erected in 1832, and in 1886 the shipment from Bay City and mills south reached 587,855,000 feet of lumber and 118,394,000 shingles. In 1887, \$4,085,000 were invested in the lumber industry. In 1860, 2 salt companies were organized, and prior to 1869, when the inspection law was passed, 3,282,117 barrels were manufactured. The total, from 1869 to 1886, was 34,100,468 barrels. Bay County in that year had 31 salt companies, with capacity of 1,300,000 barrels. About 500 men are engaged in fishing on Saginaw Bay, with over 100 sail-boats. In winter, spearing

fish through the ice is largely carried on, and at one time over 2,000 persons have camped out on the ice in small shanties. The other industries in 1887 included 2 flouring mills in Bay City and 2 in West Bay City, 1 brewery, 10 furniture manufactories, 7 planing mills (6 in West Bay City also), 4 boiler shops, 6 factories of mill machinery, 6 foundries, 4 pump factories, 5 brick works, 3 broom factories, 14 carriage factories, 5 cigar and 4 lime factories, wood-pipe works, etc., in addition to one of the chief railroad machinery manufactories in the United States. There are 12 miles of street railway.

Beatrice, a city of Nebraska, the county seat of Gage County, in the southeastern part of the State, on Big Blue river, in the center of a rich agricultural region. Seven railroads center in the city, 3 from Chicago and 4 from St. Louis and Kansas City. The streets are paved with brick from factories in the city, the cost of grading, paving, etc., to April 11, 1890, being \$159,096.60. The cost of sewerage to same date was \$40,832. The water works, of the Holly system are valued at \$85,000, and the fire department at \$3,500. The assessed valuation is \$1,100,000, and the tax levy in 1889 was 18½ mills. The total debt, bonded and floating, is \$256,160.96. There are gas and electric lights, horse and motor lines of street railway, 6 banks (4 national), with aggregate capital of \$465,000 and surplus of \$101,700, a building and loan association with a capital of \$250,000, and 3 daily, 6 weekly, and 1 monthly papers. The population in 1880 was 2,447; in 1890 it was 13,836, showing an increase of 465.43 per cent. A million and a half dollars are invested in manufactures. During 1890 real-estate transfers numbered 1,774, representing a value of \$2,500,000. The churches number 19, and there are 9 city schools, 7 of which have brick buildings, a private academy, a Roman Catholic school, a business college, and a State institute for feeble-minded youth. The Chautauqua Association has a tabernacle, at its grounds on the river just beyond the city limits, capable of seating 10,000 persons. The city has a public library and 2 opera houses.

Benton Harbor, a city of Michigan, in Berrien County, in the extreme southwestern portion of the State, at the confluence of the St. Joseph's and Paw Paw rivers, one mile from Lake Michigan, with which it has direct connection by a ship canal of ample capacity for the largest lake vessels and steamers, 60 miles from Chicago by water, and 98 by rail. A steamship line has recently been established with daily service to Milwaukee, and there are 2 lines of steamers to Chicago. The Chicago and West Michigan, the Cincinnati, Wabash and Michigan, and the Vandalia Railroads, the last with through train to St. Louis, afford additional transportation advantages, and 3 other lines are under construction to Kalamazoo, Columbus, Ohio, and South Bend, Ind. Twenty-three trains arrive daily, and there is a street railway to the contiguous city of St. Joseph. Benton Harbor is the chief port in Michigan shipping domestic fruits, which grow in the surrounding country, to great perfection. The annual income of the berry shippers is upward of \$600,000, and as many as 16,000 half-bushel crates of strawberries have been loaded at one time on a single steamer; 5,000,000

quarts of berries and 300,000 barrels of apples were produced by Berrien County in one season, in addition to other fruits. Two canning, evaporating, and cider factories employ 250 persons during the season, and by one firm 400,000 cans of tomatoes are put up yearly. There are also a cider and vinegar factory and pickle and vinegar works, manufacturing yearly 500,000 gallons of cider vinegar and 10,000 barrels of pickles. Another large plant is under construction, with warehouse and office in Chicago. Fruit-packages are manufactured by several firms, 2,000,000 packages having been produced in 1890, exclusive of a great quantity sawed and shipped in bundles, to be made up on arrival at destination. There are also 3 barrel factories, 2 brick and tile works, 2 ship-yards, 3 planing mills, 1 flouring mill with a grain elevator, 2 furniture companies with capital of \$120,000, a chilled-plow factory, 2 shoe factories, a wagon and carriage factory, and marble works. The Standard Oil Company has invested \$5,000 in a distributing plant, and a cold-storage plant has been erected at a cost of \$15,000. Lumber, received by boat from the great lumber centers north, is manufactured and shipped inland. One saw mill turned out 1,000,000 feet of lumber, mainly hard-wood, in 1890. The highest grade of wood-working machinery will be produced by machine works erected in 1891, removing from Grand Rapids, and patent steel hand-car, with steam pumping and engine works, have also removed to Benton Harbor from Detroit. The assessed valuation of Benton Harbor is \$1,200,000. In 1888, \$175,000 were invested in new buildings; in 1889, \$266,960; and in 1890, \$268,600. Two banks (one national) have a capital of \$50,000 each. There is also a building and loan association. Electric lights have been in use for more than two years, and the gas works have been enlarged to a capacity of 240,000 feet daily. Water works were under construction in 1891, with a capacity of 3,000,000 gallons daily, the source of supply being a series of wells 40 feet deep. The population in 1890 was 3,692. Baptists, Episcopalians, Methodists, Congregationalists, and African Methodists have churches, and the Catholics are building. Three public schools and a normal and collegiate institute afford educational advantages. One daily and 2 weekly newspapers are issued. The City Hall, a brick building, contains also the fire department and jail. A company has been organized to develop the water power of Paw Paw river, by a dam 1,100 long. The city has no debt.

Boisé City, a city and the capital of Idaho, county seat of Ada County, in the southwestern part of the State, on the north side of Boisé river, 50 miles above its confluence with the Snake, in a commanding position both as regards the large and fertile valley in which it lies and the rich mineral region in the mountains beyond. It had its origin in the establishment of a United States military post in 1863, though the name belonged to a fort of the Hudson Bay Company, 50 miles below the present site, in 1835. It was incorporated Jan. 11, 1866. The population in 1880 was 1,899, and in 1890, 3,391. Irrigation is carried on in the uplands, and the city is supplied by two canals which send little rivulets through every street. Shade-trees are

an attractive feature. Ada County ranks first in the State in the yield of fruit and vegetables, second in hay, and third in grain. The city enjoys terminal advantages of the Oregon Short Line Railroad, by means of a branch line from Nampa, 18½ miles long, operated by the Union Pacific. The business part of the city is of brick and stone, and fire limits have been established. There is an organized fire department, and mountain water is carried through a complete system of water works. There are electric lights, a telephone exchange, a bank, with capital of \$100,000, flour, grist, saw, and planing mills, 2 breweries, a distillery, brick and marble works, and a board of trade. Idaho was the first of the Territories to provide itself with a permanent Capitol building, which cost \$85,000. It is in the center of Capitol Square, and flanked on one side by the court house, erected at a cost of \$68,000, and the school-house, which cost \$50,000. The United States Assay Office is of stone, and cost \$81,000. During 1890 gold and silver to the amount of \$537,397 were deposited. Boise City has an altitude of 2,800 feet. In summer the heat is tempered by mountain breezes, while the "chinook," or warm winds from the coast, in winter carry off a snow-fall of from five to eight inches in the valley in one day.

Butte City, a city of Montana, county seat of Silver Bow County, the largest mining city in the world, on a cluster of hills 200 feet high, in an amphitheatre surrounded by the Rocky mountains, in the western part of the State. It is named for a towering solitary peak (Big Butte) half a mile west of the present limits. It is the railroad center of the State, having the Union Pacific, the Montana Central (connecting with the Manitoba), and the Montana Union, which last, at Garrison, 52 miles distant, connects with the Northern Pacific. The Montana Union ships about 1,500 tons of ore a day from Butte to the smelters of Anaconda. By a cut-off line from Gallatin, Butte City is placed on the main line of the Northern Pacific, which road has also a line from Laurel to the Rocky Fork coal mines. Quartz mines were discovered near Butte in May, 1864, and placer gold was found on Silver Bow Creek in October of the same year. Placer mining was carried on until 1869 (the greatest excitement being reached in 1867), and the total amount of placer gold mined to that date was \$8,540,000. In 1874-'75 a revival of the district took place, and the total product to 1880 is estimated at \$3,000,000. The product of that year was \$1,000,000; of 1882, \$2,000,000; of 1884, \$6,720,000; of 1886, \$13,246,500; of 1888, \$19,500,000; of 1889, \$22,005,689; and in 1890, by report of the United States Director of the Mint, the total product of Silver Bow County was \$26,084,504, or more than half of the total product of the State—\$40,695,723.77. Of the whole, 25,704 ounces were fine gold, valued at \$531,316; 7,500,000 ounces silver, valued at \$9,696,750; and 112,700,000 pounds of copper, worth \$16,623,250. Ten companies at Butte City are the great producers, operating about 40 mines, besides buying and reducing the product of many more; six produce copper matte carrying gold and silver (one producing bar silver also), and 4 turn out bar

silver only; 75 mines employ 6,202 men, with an aggregate monthly pay-roll of \$651,210. The present depth ranges from 80 to 1,500 feet, and the capacity of hoist from 150 to 3,000 feet. In November, 1889, a fire broke out in the depths of two of the largest mines, and raged for months among the wilderness of timbers in drifts, slopes, and levels. The formation is granite, with occasional porphyry, and the trend of the veins due east and west. Their dip is generally south, and the pitch of the ore-shoots almost invariably west. The larger veins are from 10 to 100 feet, and seem to extend through the granite like channels, filled with argentiferous or cupriferous ores. The ore-shoots (differing in their permanence from the ordinary "pocket") vary in length from 100 to 1,000 feet, and three compartment shafts are often sunk 500 feet without cross-cutting to the vein. No shaft sunk to the 300-foot station has ever been abandoned, nor has a mine worked to that depth ever been worked out. The ore in sight is enough to last for fifty years. The first smelter, a crude affair, was erected at Butte in 1866, and the first quartz mill in 1868. Prior to 1878 the only stamps used were wet crushers. The difference in the method of treating free and base silver ores is, that the former are crushed in water and the pulp placed in the amalgamating pans for treatment directly, and the latter are crushed dry and then roasted with salt to cause ready union with the quicksilver in the pans. A stamp is a bar of iron weighing from 750 to 900 pounds, set vertically, lifted by a revolving cam, and allowed to drop upon the ore as it falls beneath. Five stamps compose a battery. Five stamp mills in Butte City operate 300 stamps and crush more than 500 tons of ore daily; during 1890 they pounded out \$4,000,000; 9,175 tons of Butte ore are smelted daily. The population of Butte City (in 7 wards) in 1890 was 10,723, against 3,363 in 1880. In 1875 the city site was removed from Dublin Gulch to its present location. During 1890 the post-office business of Butte consisted of 2,198,697 letters received and 1,136,784 sent out; five carriers are employed. The city has 2 electric-light plants valued at \$40,000, and 1 gas company with works worth \$30,000, a perfect sewer system, 3 lines of street railway (motor, cable, and electric) with capital of \$100,000 each, 2 daily and 1 semi-weekly newspapers, a telephone system, 2 messenger service companies, 6 banks (2 national) with capital of \$100,000 each, 2 fire companies with electric alarm system, and a good system of water works. In addition to the public schools, there is a high-school building and also a parochial school. The churches number 12. The Catholics have a hospital, and there is a free public library. Exclusive of mines and mining, 4,408 persons are employed in industries which include 2 foundries, valued at \$150,000, and 3 machine shops, \$60,000; 4 lumber companies, aggregating \$1,500,000, and 3 planing mills, \$300,000; 3 breweries, \$150,000; 6 brick yards, \$150,000; 28 carpenter and 12 blacksmith shops, 1 lime kiln, 1 cigar factory, and 1 stone works, 2 bottling works, etc. Three railroad shops are valued at \$300,000. The court house cost \$140,000. The altitude of Butte City is 5,758 feet.

Carson City, the capital of Nevada and county seat of Ormsby County, in the western part of the State, in Eagle valley, a fertile and picturesque region near the foot of the Sierra Nevada mountains, on Carson river, 10 miles from Lake Tahoe, 21 from Virginia City, 31 from Reno, and 178 northeast of San Francisco. It has an altitude of 4,660 feet, is regularly laid out, with abundance of shade-trees, and has a fine water supply. It is the oldest town in the State, the first permanent settlements in Nevada having been made in Eagle and Washoe valleys in 1850, and was named for the famous Kit Carson. In 1859 a telegraph line was built from Genoa, and in 1869 connection by rail was established with Virginia City by means of the Virginia and Truckee Railroad. The shops of this road are at Carson City, and consist of a foundry, machine shop, and round house in one building, 427 by 170 feet, of stone and iron, at a cost of \$150,000. The principal mining and mill machinery of the State is manufactured and repaired here. The railroad owns also the large V-shaped flume from the Sierras to the city *via* Clear Creek Cañon, through which thousands of cords of wood and millions of feet of lumber are landed yearly. The population in 1890 was 3,950, showing a decrease from 4,229 in 1880. In the United States Mint here 162,509 gold pieces were coined during the calendar year 1890, valued at \$2,268,180, and 2,309,041 silver dollars. In 1889 stock yards were established. The Capitol building occupies four blocks in the center of the city, and is surrounded by handsome grounds. It was erected in 1870 at a cost of \$208,000. The Orphans' Home, erected the same year, cost \$26,000, and occupies 14 acres. The State Prison, built in 1864, cost \$127,000. There is a State printing establishment and a United States building. Near the prison are Carson Warm Springs. The average attendance at the public schools is 560, and 11 teachers are employed. For support of the Indian school in Ormsby County \$10,000 were appropriated by Congress in 1890. There are 2 daily newspapers, and 1 bank with a capital of \$100,000.

Chippewa Falls, the county seat of Chippewa County, Wis., on Chippewa river, about 100 miles east of St. Paul and Minneapolis. It is on the main line of the Wisconsin Central Railroad running between Milwaukee and St. Paul, and thus has connection with the Northern Pacific Railroad. Its other railway connections are the Chicago, St. Paul, Minneapolis and Omaha, a branch of the Chicago and Northwestern, and the Chicago, Milwaukee and St. Paul Railroad. By the former it has connections with the "Soo" line at Cameron Junction, and this line also brings it within easy distance of Ashland and Superior. The city is beautifully situated on both banks of the river. The falls of the Chippewa, from which the city took its name, were originally a series of cascades over hard granitic trap rock, having a total height of about 25 feet. This great water power has been utilized for commercial purposes. The lumber interests are the most important, and they have been the foundation of the city's prosperity. Chippewa Falls is one of the largest saw mills in the world. Its capacity during an ordinary season is about 70,000,000 feet of lumber, not to

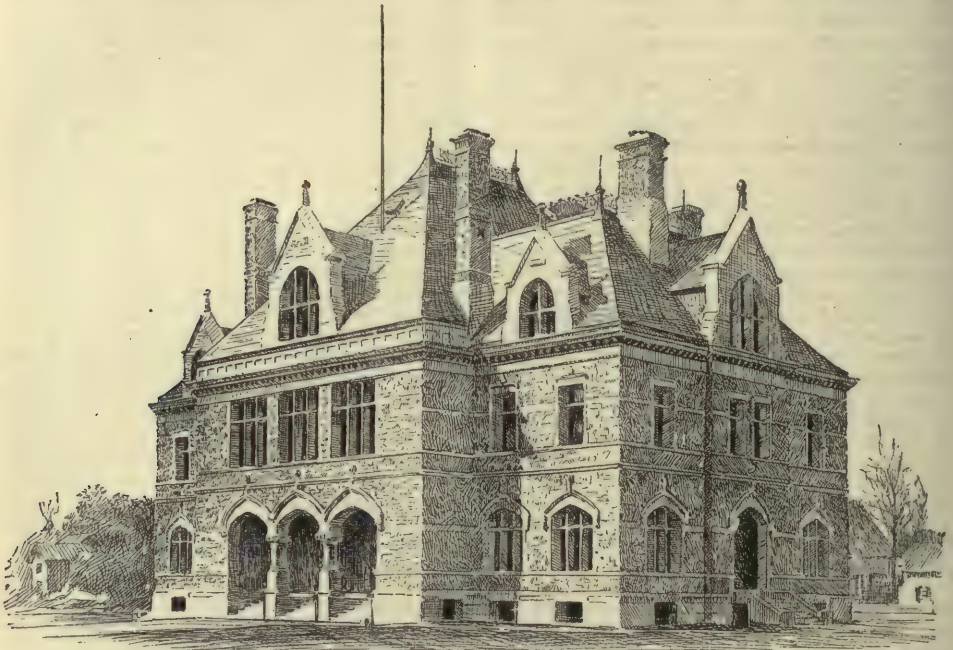
enumerate the millions of shingles and laths which are made as by-products. The saw mill is connected by a steam-motor line with the large planing mill and yards, wherein one may see between \$4,000,000 and \$5,000,000 worth of lumber ready for shipping. The Chippewa Lumber and Boom Company, the Mississippi River Logging Company, the Chippewa River Logging Company, and several other large firms, have their headquarters in the city. The first company above named is controlled by the Weyerhaeuser syndicate, which has several mills in the lumber region of Minnesota, and has recently purchased several hundred thousand acres of timber in Washington. The Stanley Manufacturing Company, Leinenkugel's Brewery, the Flour and Milling Company, with 3 large mills and an elevator, a woolen factory, a chair factory, and an overall factory, are among the other industries of the place. The city is lighted with electricity, and has a complete system of water works and sewerage. Chippewa Falls is one of the most healthful places in the United States, largely owing to the pure water. The supply of water for the city is taken from a spring which bubbles up out of the granite rock. Upon analysis it was found to be nearly pure, there being but a very small fraction of 1 per cent. of foreign matter in it. Ex-Lieut.-Gov. T. C. Pound has perfected arrangements by which he ships this water to Chicago. Several tank cars holding 5,000 gallons have been built, and regular shipments are made. Silver Springs Park, on the east side of the river, is a beautiful little suburban resort, which has been laid out for use during the summer months. There are 8 fine school buildings, a new one having been completed recently, which is claimed to be as fine as any in the State. There are 175 pupils in the high school and 1,500 in the public schools. There are several parochial schools, and a business college. Eight churches and a Catholic cathedral provide for the religious wants of the inhabitants. Two daily and 5 weekly newspapers are published in the city. By the census of 1890, Chippewa Falls had 11,222 inhabitants. There are many fine business blocks, hotels, and private residences, an electric fire-alarm system, and a good fire department. The prosperity of the city has depended upon its lumber interests, and it has long stood at the head of the lumber towns of the State.

Colfax, a town of Washington, county seat of Whitman County, in the eastern part of the State, at the forks of Palouse river, on the Union Pacific Railroad, at the junction of two divisions. It is the commercial center of the extensive and fertile Palouse country, and has fine water power. The heaviest trade is in agricultural implements, sales being made to farmers throughout the whole wheat belt north of Snake river. The volume of business for the year ending Dec. 30, 1890, was upward of \$2,500,000. The population in 1880 was 444; in 1890, 1,649. Electric lights are in use. Three banks (2 national) have an aggregate capital of \$300,000, 2 with branches in adjoining villages. Two weekly newspapers are published. There are 2 saw mills, with daily capacity of 75,000 feet, 2 foundries, 2 planing mills, 1 machine shop, and a cigar factory. The Baptist College is a four-story building, with 100

pupils enrolled. There are also 2 large district-school buildings. Six denominations own buildings. The court house cost \$90,000.

Concord, the capital of New Hampshire, situated on Merrimack river, 76 miles north-north-west of Boston by rail; population in 1890, 17,004. Its growth has been steady for many years, the largest increase being in the last decade. The Merrimack river divides the city north and south. The main part of the city, is on the west side of the river, and comprises the compact part of Concord, the village of West Concord, and part of Penacook (formerly called Fisherville), on Contoocook river, 6 miles north of the State House. An electric railway, 7 miles long, connects all these sections of the city, in addition to steam railway service on two roads. The village of East Concord and nearly all of

ried. The Abbot-Downing carriage manufactory is one of the largest and longest established in the country, and its products are found in every quarter of the globe. The Page Belting Company has a capital of \$500,000, and sends its products all over the world. Some of the other larger industries are axle works, furniture, flannels and worsteds, flouring by roller process, harness, boots and shoes, and silverware. The granite industry is conducted by many companies, the largest of which is the New England Granite Company, which is furnishing the stone for the new Congressional Library building at Washington, D. C. The quarries from which all the stone is taken are on Rattlesnake Hill, near West Concord, and are accessible for railroad transportation. The wholesale and retail trade is large, and the city has a great many fine



UNITED STATES GOVERNMENT BUILDING, CONCORD, NEW HAMPSHIRE.

the territory east of Merrimack river are comprised in one ward. Concord is the railway center of the State, and has one of the largest and most conveniently arranged passenger stations in New England. It possesses a good gravity system of water works, the source of supply being Penacook lake, which contains 265 acres, $3\frac{1}{4}$ miles from the State House. An additional high service is now in process of construction from the same source. There are 43.89 miles of main and distributing pipes, 10.71 miles of service pipe, 183 hydrants for fire purposes, and 24 private hydrants. There are several miles of sewer in the streets of the central part of the city connected with the river. There is a gas and electric-light company, which has recently erected a commodious station for arc and incandescent lighting. The manufacturing interests are va-

stores and business blocks. The new Government building, which cost \$200,000, is of Concord granite, and is one of the most beautiful and best-arranged structures of its size to be found in the country. It contains the post-office, United States Pension Office for New Hampshire and Vermont, and United States Court room, with all necessary apartments for officers of the court and jurors. A new State Library building is in process of erection near the State House and Government building. The public-school buildings are unsurpassed by those of any city of its size, the high-school building, completed last year, being a model in architecture and interior arrangement. There is a Roman Catholic parochial school, with 300 pupils, and an Episcopal school for girls. St. Paul's School, a noted institution of learning for boys,

2 miles west of the railway station, has more than 300 pupils and a numerous corps of instructors. A large building has just been erected, which makes a valuable addition to the hamlet that has grown up around the school. The new chapel, recently completed, is unequaled by the chapel of any like institution of learning. The churches of Concord are: 1 Advent, 3 Baptist, 1 Free Baptist, 2 Roman Catholic, 4 Congregational, 3 Episcopal (including the one at St. Paul's School), 3 Methodist, 1 Unitarian, 1 Universalist, and an Episcopal mission at East Concord. The charitable institutions are an Orphans' Home, near St. Paul's School; an Odd-Fellows' Home, open to members of the fraternity in the State; a Home for the Aged; and the Margaret Pillsbury General Hospital, just completed at an expense of \$70,000, and given to the city by Hon. George A. Pillsbury, of Minneapolis, Minn., to commemorate his golden wedding. It has accommodations for 50 patients. There are 2 Masonic lodges, 1 chapter, and 1 commandery of Knights Templars; 3 Odd-Fellows' lodges, 2 encampments, and 1 canton of Patriarchs Militant; 1 Knights of Pythias lodge; 3 Grand Army posts; a Foresters' Court; St. Patrick's Benevolent Society; French Canadian Society; and other benevolent and fraternal organizations. The Odd Fellows have a fine building, recently completed. The Fowler Library building, containing the free public library of 16,000 volumes, is a recent gift to the city from a son and a daughter of the late Hon. Asa Fowler. It contains a room for the meetings of several Shakespeare clubs. The New Hampshire Historical Society's building contains a valuable collection of books, documents, and papers, and is open to the public. The State Library has outgrown its accommodations in the State House, but in due time will be removed to the new library building, which will also contain rooms for the accommodation of the Supreme Court when holding its law terms and special sessions. The State House Park has bronze statues of Daniel Webster and Gen. John Stark, and one of the late Senator John P. Hale will be placed there in 1892. A soldiers' memorial arch is soon to be erected at the entrance. Concord has 3 national banks and 4 savings banks, the latter having over \$8,000,000 of deposits and 18,284 depositors in 1890. The largest and oldest of the savings banks is the New Hampshire, with \$3,786,000 deposits, which occupies a fine block of its own. All the banks have convenient and elegant rooms for the transaction of business, built or remodeled within the past few years. The First National Bank has the best banking rooms in the State, just completed. There are 2 daily and 3 weekly newspapers. The building recently erected by the Republican Press Association as a home for the Concord "Evening Monitor" and "Independent Statesman" is one of the best arranged and most complete printing establishments in New England. It is lighted by its own electric plant. This association first introduced incandescent lighting in the city six years ago. Electric power is now supplied to run small machinery and printing presses by the Street Railway Electric Car Company. The electrical railway has been extended about a mile through the west end of the city, and is

largely increasing its business. The water power on Contoocook river has been utilized recently by the erection of a new woolen mill, about a mile west of Penacook, by the Concord Manufacturing Company of West Concord, and there is still large water power unused on the Merrimack river. There are 2 parks in the central part of the city, and another at the outlet of Penacook lake. The fire department comprises 173 men, 60 of whom belong to 2 hand-engine companies in East and West Concord, and the others to steamer, hose, and hook and ladder companies in the central part of the city and in Penacook. The New Hampshire Asylum for the Insane accommodates 350 patients. The State Prison is a model penal institution, and, to the credit of the State, is only about half filled.

Corsicana, a city of Texas, county seat of Navarro County, near the center of the State, 60 miles from Dallas and Waco, at the intersection of the Houston and Texas Central and the St. Louis Southwestern Railroad. The first railroad reached the city in 1880, from Tyler. Water is reached in wells at a depth of from 10 to 40 feet, and there are numerous tanks or artificial lakes, 5 of which around Corsicana have a water surface of 160 acres, are stocked with fish and visited as resorts. Corsicana has a population, by the census of 1890, of 6,285, an increase of 2,912 over 1880. Good county roads enter the city. Drainage is natural from north to south, and there is a good sewerage system, with several miles of mains. Water works have been erected at a cost of \$100,000, and there are gas and electric-light plants valued at \$50,000. The public schools had 1,500 pupils, with 23 teachers, in 1890-'91, the Catholics having also a convent school. The churches number 11. There are 3 national banks, one with a capital of \$100,000, and 2 loan agencies, the capital of one of which is \$400,000. A fire department was organized in 1883. One daily and 6 weekly newspapers are published. There are 5 miles of street railway. The industries include a wheat elevator and flouring mill, with capacity of 300 barrels daily, a gin factory, iron foundry, bottling works, an ice factory, a soap factory, carriage and wagon works, a cotton-seed-oil mill, machine shops, and a cotton compress with capacity of 1,000 bales daily. The County Court House, of brick and stone, cost nearly \$85,000, and the City Hall \$20,000. The State Orphans' Home consists of two large buildings, contains 100 children, and cost \$50,000, to which the city contributed 200 acres of land. There is also a State Odd-Fellows' Home worth \$30,000.

Danbury, a city of Connecticut, one of the capitals of Fairfield County, in the southwestern part of the State, 20 miles from Bridgeport, 28 from New Haven, and 65 from New York, to which last city there are 14 passenger trains daily. Direct communication east and west is afforded by the New York and New England and the Housatonic Railroads. The city is the northern terminus of the Danbury and Norwalk Railroad, and has also the New York City and Northern. The first settlement was made at Danbury in 1684, and the first church erected in 1696, the Indian name for the section being Pah-quioque. During the Revolution it was made a depot of supplies, and Gen. Tryon, marching

from New York, April 25, 1777, with 2,000 men, destroyed, on the following day, a large amount of public stores and private property. Gens. Silliman, Arnold, and Wooster hurried to the relief, and the last named received a mortal wound at Ridgefield, and expired at Danbury, where he was buried. In 1854 his remains were removed to their present resting-place (Wooster Cemetery), and a fine monument was set up at the expense of the State and his brother Masons. Danbury was continued as a Government depot, with a garrison, and in 1778 an army hospital was established. For several weeks Gen. Gates camped here with an army of four brigades. In 1784 it became a shire town, and in 1822 was chartered as a borough. In March, 1851, the first railroad was completed. During the civil war 1,360 citizens, or about one sixth of the population, entered the service of the United States, and \$154,566 were contributed to the war fund. The city was incorporated in 1889. The population in 1870 was 8,753; in 1880, 11,619; and in 1890, 19,473. Danbury is the chief city in the manufacture of hats in the United States. The first factory in the country was established here in 1780, by Zadoc Benedict, who, with 1 journeyman and 2 apprentices, produced 3 hats daily. In 1801, 20,000 hats (mostly of fur) were produced yearly for exportation. In 1891 there were 30 large factories, employing over 3,000 persons, and turning out 6,000,000 hats a year; also 2 mills for the preparation of fur, 3 factories for wooden hat-cases, and 7 for paper boxes. The other industries include 5 large iron mills and a silver-plating establishment. Water is supplied from 4 reservoirs, and there are 2 natural lakes in the city. There is a paid fire department with electric alarm, and a line of street railway connecting with the borough of Bethel on the south, and traversing the principal thoroughfares from east to west. Electric lighting is in use. One daily, 1 weekly, and 1 monthly papers are published. Two national banks (one of which has a stone building erected at a cost of \$85,000) have an aggregate capital of \$577,000, and surplus of \$123,000. There are also 2 savings banks. Ten religious denominations are represented, with buildings of their own. Robert Sandeman, a native of Scotland, the founder of a sect with 400 followers in the world, 40 of whom are in the United States, died in Danbury in 1771, and is buried here. The Sandemanian church at Danbury was founded in 1875, but has been sold. There are 6 public-school buildings, costing \$100,000. The attendance is 2,100. In addition to private institutions, there are also Roman Catholic and German Lutheran parochial schools. The library, a gift to the city from the family of E. Moss White, occupies a fine building. Prominent charitable institutions are the hospital, which cost \$15,000, and the Children's Home and Relief Society, the latter incorporated in 1884. The City Hall cost \$45,000, and an appropriation has been made by Congress for a Federal building. There is a finely equipped club-house, and the city has two boards of trade. The business streets are paved, and there are miles of good sidewalks, shaded by elms, some of which are more than a century old. The Danbury Agricultural Society has a membership of 20,000.

Decatur, a city of Illinois, county seat of Macon County, in the center of the State, on Sangamon river, 39 miles east of Springfield, 174 miles from Chicago, and 108 from St. Louis. It is an important railroad center, 7 roads reaching out in 13 directions, penetrating 62 counties of the State. Two hundred trains enter and leave the city every day, and \$700,000 are received yearly for freight. Decatur is the principal city on the main line of the Illinois Central Railroad, and the offices, shops, round houses, and tracks of the Wabash Railroad here are valued at \$1,778,905. Three of the general offices of the entire system are in Decatur, as are also the general offices of the Terre Haute and Peoria. The city is sixty years old, and in 1880 had a population of 9,547; in 1890 it was 16,841, showing an increase of 76.40 per cent. On Nov. 6, 1891, it was shown that permanent improvements during the year reached the sum of \$1,166,088, of which \$508,000 were for public and business buildings, \$527,300 for private residences, \$66,288 for sewers, and \$29,500 for paving. For the last item \$300,000 had been expended to June, 1890. The water works have been doubled, and there is a superior fire department. In addition to the electric-light plant owned by the city, there is an electric company, with an investment of \$70,000, under the same management as the gas company, the works of which were established in 1868. Two electric street railways have 12 miles of road. The city property, exclusive of parks, amounts to \$486,999, and the debt is \$60,490, the interest on which is paid, with an excess of \$800, by the income from the water works. Four banks have an available capital of more than \$1,000,000, and there are 3 building, loan, and savings associations. The school property is valued at \$150,000, and the school debt is \$22,317. In addition to the high school, there are 8 school buildings, in which 50 teachers were employed in 1890, with an attendance of 2,936 pupils. In addition there are 3 private schools, a college of music, and a business college. The churches number 23. There is a city library, of nearly 10,000 volumes. Four daily and 5 weekly newspapers are published. The wholesale and jobbing trade of the city is about \$6,000,000 yearly. There is a board of trade. Decatur is in the center of the great coal fields of Illinois; two shafts are worked within the city. Over \$500,000 are invested in manufactures, employing 2,500 persons. The products include brass and iron work, agricultural implements, special machinery, electric dynamos, motors, etc., artificial stone, vitrified paving stone, brick, automatic grain scales, elevator supplies, gas machines, galvanized-iron cornice, carriages, road carts, etc., wire clothes-lines, furniture, windmills, sash, doors, and blinds, incubators and brooders, trunks, tents, cigars, pumps, hose supporters, metallic mats, oil barrels, and artificial ice. There are linseed-oil mills, a brewery, bottling works, lumber companies, a yarn factory, and knitting works. A new court house was constructing during 1891, to cost \$100,000, and an opera house has been completed, with seating capacity of 1,600, costing a similar amount. The Woman's Club is erecting a building. There are several public parks. A trotting association was formed in

1889-'90, which owns a race track and driving park. There are several pleasure resorts on the river, which forms nearly a semicircle around the city, and on which a small excursion steamer plies in summer. In consideration that Decatur was the birthplace of the Grand Army of the Republic, the first encampment having been organized there April 6, 1866, the twenty-fifth State anniversary encampment was held there April, 1891. A large memorial hall is also to be erected. The city is named for Commodore Stephen Decatur, U. S. N.

Fairhaven, a city of Washington, in Whatcom County, on Bellingham Bay, an arm of Puget Sound, founded in 1889. By the census of 1890 it had a population of 4,076, and the assessed valuation was \$7,438,300. It is the Pacific coast terminus of the Great Northern Railroad, and, by the Fairhaven and Southern and the Fairhaven and New Westminster Southern, connects with the Northern Pacific and Canadian Pacific systems. The Great Northern Railroad has constructed ocean wharves on the fine harbor at a cost of \$100,000. Steamers ply between it and adjacent cities, and the port is visited by Pacific steamships. A large hotel of stone and brick was opened September, 1890, which cost \$150,000, and a large brick block was constructed during the year valued at \$50,000. Two schools represent a value of \$70,000, and in addition to more than 200 buildings completed, 100 were in course of construction Jan. 1, 1891. Four banks (2 national) had a combined capital of \$300,000. There are telegraph, telephone, and express facilities; street improvements completed and under contract Jan. 1, 1891, were placed at \$391,000; and a sewerage system was under way, to cost \$100,000. There is a paid fire department, while gravity pressure of the water in the hydrants is sufficient protection in the lower portion of the city. Water is conducted from Lake Padden, 2 miles from the city, with a fall of 418 feet, and is conducted through a 12-inch steel pipe. Gas and electric lights are in use, and an electric street railway is in process of construction. Five churches have been completed, and there is a hospital erected by the Sisters of Peace, costing \$50,000. Eighteen teachers are employed in the public schools. A daily and a tri-weekly newspaper are published. An opera house is under construction, to cost \$100,000, and there are several public halls. The city has no debt, and the receipts of the treasurer for 1890 were \$168,726.65; disbursements, \$144,201.92. In addition to the immense timber resources, the county contains deposits of coal and iron yet undeveloped, gold and silver, and building stone of fine quality, which last is being quarried south and east of the city. Seattle was almost entirely rebuilt of the blue sandstone from the southern extremity of Fairhaven town site, and the Portland post-office and other buildings of Portland and San Francisco have been constructed from it. Graphite and asbestos deposits lie in sight of the city, and are being developed. For 2 miles along the water front stretch 8 saw mills, with total capacity of 700,000 feet a day. A \$2,000,000 steel company was formed in 1890 to erect smelting works at the city, being engaged in developing the iron resources on the Skagit river, and coal bunkers are being erected to load directly from

railway cars to vessels, with capacity of 1,000 tons daily. A foundry and machine shop are in operation, costing \$75,000, and there are 2 shingle mills, 2 sash, door, and blind factories, 3 pressed-brick works with capacity of 15,000,000 per annum, 3 stone quarrying and cutting plants, a furniture factory, a galvanized-iron cornice works, a tent and awning factory, carriage works, potteries, and car and steamship repair shops, with minor industries. The scenery of the surrounding country is picturesque, and there is abundance of game and fish.

Fairbault, a city of Minnesota, county seat of Rice County, on Cannon river at its junction with the Straight, 53 miles south of St. Paul. It is built in a valley, and the 6 large school edifices on limestone bluffs overlook the landscape. The Iowa and Minnesota division of the Chicago, Milwaukee and St. Paul Railroad and the Cannon Valley division of the Minneapolis and St. Louis enter the town, and seven good water powers afford facilities for manufacturing. The population in 1870 was 3,045; in 1880, 5,415; and in 1890, 6,520. The streets are shaded with maples and elms, and the lawns and gardens are tastefully kept. It is the business center of one of the most fertile agricultural districts of the State, in which a change from wheat-growing to dairying during the past decade has brought renewed prosperity. There are 8 flouring mills, 2 grain elevators, a woolen mill, a furniture factory, and a manufactory of windmills. Quarries of limestone afforded the material from which the institutions of learning were erected. These are the State institutions for the blind, the deaf and dumb, and for feeble-minded children, and three Protestant Episcopal schools. Shattuck School for boys was founded in 1861, to which have been added Shumway Memorial Chapel in 1872, which cost \$30,000, and Shumway Hall, built in 1886-'87 with a portion of a legacy of \$200,000 left to the school by Mrs. Shumway, of Chicago; Morgan Hall (1888-'89), the gift of J. S. Morgan, of London, England; and the Smyser Memorial (1889): an armory and gymnasium; Whipple Hall; the Lodge; and several cottages occupied by professors. Two hundred pupils are trained under military discipline and wear uniform. This school is controlled by the Bishop Seabury Mission, as is the Divinity School, founded in 1859, with 10 professors and instructors and 30 students in 1887-'88. St. Mary's Hall, for girls, founded by Bishop Whipple in 1866, is a handsome stone edifice, with about 100 pupils. There is also a Roman Catholic academy and convent. Two national banks have a capital of \$130,000. Four weekly newspapers are published.

Gainesville, a city of Texas, county seat of Cooke County, in the northern part of the State, 6 miles south of Red river, the boundary between the State and Indian Territory, in a rich agricultural country. The county has an area of 933 square miles, or 597,120 acres. Of these, 36,091 acres were in cotton in 1890, 40,686 in corn, 21,308 in wheat; oats, barley, millet, and other grasses are raised also, and, in addition to stock-raising, the fruit crop is large and increasing yearly. About half of the county is timber. In 1890, 1,857 farms owned 13,586 horses, 39,240 cattle, and 14,699 hogs. The population of Gainesville in 1880 was 2,667, and in 1890 6,594, show-

ing an increase of 147.24 per cent. In 1879 the first railroad reached the city from Denison, and in 1886 the Santa Fé system built through from Galveston. This is intersected by the Missouri, Kansas and Texas, absorbing previous corporations, and giving outlets in all directions. The division headquarters, round house, and machine shops of the Santa Fé Railroad are here. The assessed valuation of property in the city in 1891 was \$3,561,435. Three national banks have an aggregate capital of \$375,000. There are 4 public schools, costing nearly \$100,000, in which are about 1,200 children. The Presbyterian Synodical College for women was erected in 1890, and the Gainesville College was already in existence. There are 11 churches for whites and 3 for colored persons. The industries embrace 2 flouring mills, an iron foundry, a planing mill and machine shops, an ice, a broom, a cigar, and a soap factory, bottling works, a cotton compress, and steam brick and marble works. Water works of the Holly system represent a capital of \$215,000, the supply being drawn from the Elm Fork of Trinity river; and there are 5 miles of street railway, a telephone exchange, gas and electric lights, 3 halls, and several fine club-rooms, also a public library. The city was founded in 1849. The assessed valuation in 1890 was \$4,000,000. Gainesville has an altitude of 900 feet, and a mean annual temperature of 66°.

Great Falls, a city of Montana, the county seat of Cascade County, near the center of the State, on Missouri river, at the confluence of Sun river, where begin the only series of falls in the Missouri in its total length of 4,000 miles. It is on a level prairie, stretching 2 miles along the river, which has an average width of 1,200 feet, and within a distance of 10 miles has a fall of over 500 feet, including Black Eagle Falls, within the city limits, across which a dam has been built, costing more than \$200,000, giving a water power estimated at 1,000,000 horse power. The site was purchased in 1884-'85 from public lands of the Government, and the population in 1890 was 4,750. In 1888 the assessed valuation was \$2,400,000; in 1889, \$4,311,000; and in 1890, \$8,646,548, with a tax levy of 12 mills. The city is the western terminus of the Great Northern Railway, and the eastern of the Montana Central, by which it is connected with the Northern Pacific. By the Great Falls and Canada Railroad it is joined to the Canadian Pacific, and over the Great Falls, Sand Coulee, and Neihart Railroad, coal is shipped from the Sand Coulee mines, and ores from the Belt mountains, 60 miles away. The railway tonnage of the city is already greater than that of any other city in the State, excepting Butte. The Great Falls and Canada Railroad has its shops at Great Falls, and plans have been drawn for extensive establishments of the Great Northern. Adjacent coal fields, covering an area of 400 square miles, have an average thickness of 10 feet. The estimate was made of 5,000 tons daily output before the close of 1891. The mineral zone of the Little Belt mountains, extending 25 miles along the range, in which are various mining camps, contains large deposits of lead, carbonate, and galena ore, carrying 20 to 30 ounces of silver per ton; and there are also large veins of hematite iron ore, 20 to 30 feet in width,

traceable upon the surface for several miles. Smelters built and building in Great Falls in 1891 will cost \$5,000,000, and an iron and brass foundry and machine shops have been constructed. The employment of electricity in treating copper matte will be facilitated by the great water power available, and an electric-light company is already in existence. Water works built in 1889 cost \$150,000, and there is a perfect system of sewerage. Five miles of electric street railway were in operation March, 1891, soon to be increased to 12. The churches number 6, and there are as many banks, 3 building and loan associations, a public library building, 2 daily newspapers, and steel wagon bridges across the Missouri and Sun rivers; \$5,000 were expended during 1890 on parks, and 20,000 shade-trees have been planted. The city has a board of trade and a Young Men's Christian Association. In addition to old-established mills, a saw-mill plant, with capacity of 120,000 feet in ten hours, is erecting, having a machineshop in connection already built, the capital of which is \$1,000,000. One of the smelters, already established, will have an output of 5,000 tons of sheet copper and electric wire in twenty-four hours. Large stock ranges are tributary to the city, and 3,400,000 pounds of wool were marketed in 1890. Irrigating ditches are under construction; one, 75 miles in length, 30 feet wide at top and 15 at bottom, 4 feet in depth, to irrigate 300,000 acres in Choteau and Cascade Counties, and costing \$500,000, will end on high prairie a little west of the city. The altitude of Great Falls is 3,312 feet, and the severity of the winter season is tempered by the rarity and dryness of the atmosphere.

Harriman, a new city, in Roane County, Tenn., 255 miles south of Cincinnati, 80 miles north of Chattanooga, 50 miles west of Knoxville, and 125 miles east of Nashville. It is at Emery Gap, the natural gateway on the east of the great Cumberland plateau, and was founded Feb. 26, 1890, by Gen. Clinton B. Fisk and associates. One farm-house and a few cabins and shanties then marked the site. As it was not a corporation, but merely part of a large district, when the census of 1890 was taken, its population then can not be given. On Oct. 24, 1891, a committee of visitors made a public report, saying: "The activity in building lines will be best understood by a statement of the fact, based upon an actual count by two of our number who drove about for the purpose, that in the eighteen months since the beginning of building operations 439 houses have been built, not including 51 in different stages of construction, also 34 brick stores, 28 frame stores (besides 8 just burned), 4 churches, 2 others in course of construction, 1 exposition building, 1 public hall, a very handsome office building for the Town Company, 2 hotels, and 3 schools. The number of stores seems out of proportion to the houses; but it should be remembered that many families are occupying rooms in the store buildings. We believe that these houses to-day must contain over 3,000 people." The compiler of a city directory, in December following, reported the population in excess of 4,000. The city is at the junction of the Walden's Ridge Division of the East Tennessee, Virginia and Georgia Railroad with the Cincinnati Southern Railroad. It has its own belt-line railway, which

is part of the Harriman Coal and Iron Railroad system, and several other railroads have been surveyed to and through it, including the Tennessee Midland, now building west of Nashville. It is a natural railroad center, and is at the head of navigation on Emery river, which flows into the Clinch 3 miles above the confluence of that stream with the Tennessee. Rich and inexhaustible deposits of bituminous and coking coal begin on the city site, and extend many miles west, north, and northeast, with fine beds of canal coal 15 to 20 miles northeast in the Brushy Mountain field, to which the Harriman Coal and Iron Railroad is building. Coal for factory and domestic use is mined at the city's edge, and iron ore is taken out inside the limits of the town. Veins of rich ore extend several miles eastward, and 10 miles to the south, across Tennessee river, are iron-ore beds, tributary to Harriman, estimated to contain over 50,000,000 tons. The best building stone is obtained from quarries inside the city; and pressed brick, fire brick, etc., are made from clay, also inside the city boundaries. An abundance of timber of all kinds is accessible. All real estate in the city is sold with prohibition of the liquor traffic stipulated in title deeds. There are 2 weekly papers and 1 daily, electric lights, temporary water works (with a permanent system to be put in at cost of \$100,000), supplying the purest of mountain water from Emery river) 12 miles of graded streets, part of them macadamized, a central graded school of the highest class, the Lookout rolling mills, considered the finest in the South, a hoe and tool factory, a tack factory, 2 planing mills, 1 saw mill, 1 brick yard, lime kilns, bit and auger works, agricultural works, foundry and machine shops, an oil depot, a furniture factory, and large wooden-ware works, 3 hotels, 3 banks, 10 church organizations with 7 churches, a Young Men's Christian Association with rooms and library, and a Women's Christian Temperance Union temple costing \$8,000. The business organizations, exclusive of the banks, have a capital of \$7,865,000. Harriman is the natural outlet and source of supply for at least 1,000 square miles of territory rich in mineral resources, well timbered, and comprising a large agricultural area, with beautiful scenery and a healthful climate.

Joplin, a city of Missouri, in Jasper County, in the southwestern part of the State, in the great zinc and lead mining district, the zinc ore produced within a radius of 15 miles of the city being 75 per cent. of the total product of the United States, and one seventh of that of the world. The production of lead and zinc in the Joplin district in 1889 was worth \$4,000,000, and in 1890, \$6,000,000. The ores are distributed over an area 30 miles square, occurring in blanket formations, or deposits, mingled for the most part with broken flint, reached at a depth of 50 to 100 feet, and extending from 175 to 600 feet, the greatest depth yet reached by steam drills. No profitable zinc mining was done in Missouri until after 1864, and no zinc blende was profitably mined and smelted until 1873. By report of the United States Census for 1870, the product of lead mining in the State was \$201,885, it being the second lead-producing State at the time. In 1873 Joplin alone produced \$500,000 worth of lead. Webb City, Cartersville, Lehigh, Belleville, and

Galena are the largest mining camps, at equal distances from the city, and one mining company alone has produced upward of \$3,000,000 in ore. A large percentage of the ores are smelted in Kansas, at Joliet, Ill., Rich Hill, and St. Louis, but Joplin has now a large zinc smelter, and two others are projected. The only company in the United States manufacturing white lead by the Lewis-Bartlett patent is at Joplin, turning out 10,000,000 pounds of pig lead yearly and 2,000,000 pounds of white lead, by utilizing the fumes, in long flannel sacks. The value of the plant is \$300,000. Railway facilities are afforded by the Missouri Pacific, the Atchison, Topeka and Santa Fé, the Kansas City, Fort Scott, and Memphis, and the Kansas City, Fort Smith and Southern Railroads. The population in 1880 was 7,038; in 1890, 9,943, an increase of 41.28 per cent. The population of Jasper county was in 1880, 32,019; in 1890, 50,500. The assessed valuation of real and personal property for the county in 1889 was \$8,142,878. Joplin has several large foundries and machine shops. Four banks disburse \$50,000 weekly for mining purposes. From 800 to 1,000 buildings were erected in 1890, including a new opera house and a new high-school building. The wholesale trade is \$1,500,000 annually. Two electric-light plants are in use, and 4 miles distant, at Grand Falls, an electric light and power plant is constructing at a cost of \$250,000, claimed to be the largest plant in the world. This will furnish light and power to the city and the mines. The assessed valuation shows a taxable wealth of \$1,500,000, on a one third basis, and the tax rate is 60 cents on \$100. A double-track electric street railway is in operation, also 6 miles of horse-car line. Three daily papers are published, and there is a telephone exchange, good water, and an efficient fire department.

Kokomo, the county seat of Howard County, Indiana, a city of 12,000 inhabitants, on both sides of Wildcat river, 54 miles north of Indianapolis and 142 southeast of Chicago. Three lines of railway pass through the city—the Pan Handle (C., St. L. and P.), the Natural Gas Route (L., E. and W.), and the Clover Leaf (T., St. L. and K. C.). An electric street railway is in process of construction. Kokomo is in the most productive territory of the Indiana natural-gas belt, and since the discovery of gas in October, 1886, has grown with remarkable rapidity. At that time it was an ordinary county-seat town of 3,500 inhabitants, with no manufacturing interests worth mention, and its commercial condition insignificant. Natural gas for fuel was offered free to manufacturers. Kokomo has had industrial accessions amounting to over \$3,000,000. The chief industries are furniture, plate glass, cutlery, window glass, steam boilers, wood pulp, paper, pulp board, strawboard, opalescent glass, glass bottles, steel safes, steel ranges, brick, tile, staves, wagons and carriages, canned fruits and vegetables, and grain registers. A fine water-works system has been put in, and also an electric-light plant and a \$200,000 natural-gas plant. The city has 9 churches, 5 public-school buildings, 2 national banks, a new post-office building, and free delivery. The public buildings are a \$100,000 court house, a \$50,000 jail, a \$50,000 county infirmary, and an orphans' home.

La Crosse, a city and the county seat of La Crosse County, Wis., at the confluence of the Black and La Crosse rivers with the Mississippi. It is a terminal of the Chicago and Northwestern Railway, the Chicago, Burlington and Northern, and Green Bay, Winona and St. Paul Railroads, and of four divisions of the Chicago, Milwaukee and St. Paul Railway. Its population in 1880 was 14,505; in 1890, 25,121. The growth of its business is exhibited in the following table:

ITEMS.	1881.	1890.	Increase per cent.
Population (official).....	14,505	25,121	73-18
Value of goods manufactured.....	\$8,867,588	\$15,987,825	\$151 00
Value of merchandise handled.....	\$1,619,975	\$20,127,440	\$835 66
Aggregate deposits in banks.....	\$18,248,000	\$80,667,111	\$181 57
Money orders issued and paid.....	\$35,000	\$284,817	\$570 90
Assessed valuation of property.....	\$3,287,586	\$10,750,130	\$227 00
Railroad tonnage.....	176,649 tons	520,870 tons	194-07
Macadamized streets.....	9 miles	15 miles	66-66
Sidewalks.....	30 miles	55 miles	83-38
Water mains.....	9½ miles	21 miles	121-00
Fire hydrants.....	98	194	95-00
Revenue of water department.....	\$5,000	\$18,440	\$268 90
Building operations for ten years, \$7,820,125.			

It is connected with the Minnesota shore—from which it draws an extensive business—by a drawbridge opened for traffic in the autumn of 1890. The bridge has the longest span, save one, on the Mississippi, and cost \$200,000. In the common and high schools not only the tuition but books and all the accessories of education are furnished free, and the city has a free library, in a handsome building containing over 10,000 volumes. There are 45 churches, 6 public halls, and a convenient and tastefully embellished opera house. There is an excellent system of water works, with an efficient fire department. The city is lighted by gas and electric lights. The good natural drainage is supplemented by a complete system of sewers. The town is traversed in all directions by street cars. There is a board of trade. The streets in the residence portion are all lined with shade-trees, and the effect is further enhanced by the general attention paid to the floral and horticultural surroundings. The dwellings are mostly owned by the occupants, even the laboring classes being, as a rule, freeholders.

Lafayette, a city of Indiana, county seat of Tippecanoe County, on both sides of Wabash river, at the head of navigation in the western part of the State, 64 miles from Indianapolis, 120 from Chicago, and 180 from Cincinnati. Of 5 railroads traversing the county, 4 pass through the city, viz., the Louisville, New Albany and Chicago, the Wabash, the Cleveland, Cincinnati, Chicago and St. Louis (Big Four), and the Lake Erie and Western. A belt railway connecting all the factories with the main roads is owned by a company organized in 1889 with a capital of \$250,000. The population in 1880 was 14,860, and in 1890, 16,243, an increase of 9-31 per cent. The assessed valuation of the city is \$10,000,000. There are about 70 miles of improved streets, with an area of 3½ miles, being rapidly laid with

improved brick, and 22 miles of free gravel roads connect with the surrounding country. Four national, 1 private, and 1 savings bank have an aggregate capital of \$525,000, and deposits of \$3,000,000. There are 20 churches. Three daily and 6 weekly newspapers are published, electric lights are in use, and there are 4½ miles of electric street railway; also a competent fire department with electric alarm. The water works were completed in 1876 at a cost of \$350,000. The 9 public schools have an average attendance of 2,000 pupils, and there are in addition private and sectarian institutions. The city is also the site of Purdue University (named for John Purdue, who gave to it \$150,000), which comprises 8 buildings, and has a United States agricultural experimental station. During 1890 the attendance of students was 550. A new union depot has been completed, and a public library erected at a cost of \$50,000, containing 12,000 volumes. Congress appropriated \$80,000 for a Federal building in March, 1890, and the County Court House, one of the finest and most elaborate in the State, cost \$500,000. North of the city is the famous battle-ground where the Indians under Tecumseh were defeated by Gen. William Henry Harrison in 1811. Natural gas is supplied in from 23 wells in Tipton County, with a registered pressure of 300 pounds at the wells. The industries include car works employing 800 men, 5 large boot and shoe factories, 4 large cooperage establishments, iron works, foundries, 1 paper and 1 horning mill, 4 breweries, pork-houses, and 1 distillery. In the public square is an artesian well of sulphur water. The city is the largest of the 24 places in the United States named in honor of the French general. The surrounding country is rich, and there are many beautiful suburban homes.

Lewiston, a city of Idaho, county seat of Nez Percés County, on the western line of the State, at the junction of Snake and Clearwater rivers. The business part of the city is on a level tract extending from Snake river on the west about two and a half miles easterly to a picturesque and lofty bluff, varying in width from 300 yards to a quarter of a mile. The difficulty and expense of getting water on the plateau to the south, which has an average elevation of 80 feet above the business quarter, has confined building largely to this area; but water works of the Holly system, costing \$100,000, under construction in 1890-'91, will obviate this difficulty. A compound duplex pump, operated by a 90-horse-power steam engine, conveys water from Clearwater river to a reservoir of 1,500,000 gallons' capacity, at an elevation of 225 feet, from which it is distributed in two mains, 8×10 inches, connecting at the farther end of the city and forming a complete circuit, which can be operated by direct pressure or gravitation, the pressure in the business portion being 97 pounds to the square inch, and on the plateau to the south 65 pounds. A canal 17 miles long, carrying water from Sweetwater river through a cañon to a strip of table-land a few miles in rear of the city, covering 25 square miles, is another undertaking of great importance. Fruit-growing and grain and stock raising are the principal industries of the county, which contains 90,477 acres of improved land. The larger part, however, is

included within the Nez Percés Indian Reservation, the lands of which are being allotted in severalty, and 500,000 acres of fine agricultural and grazing land will soon be opened to settlement. Vast amounts of timber will also be available. Although 400 miles from the sea, the altitude is only 600 feet, and two crops of fruit are frequently raised the same summer. Orchards surround many of the dwellings in Lewiston. The town was settled in 1861 by a party of miners, and on the discovery of the Salmon river mines there was an influx of between 12,000 and 15,000 persons; but in June, 1863, they removed to the Boisé basin. The recent growth has been since the Union Pacific Railroad was completed to Riparia, to which place there are now two steamers a week. There are also daily stage lines to the Oregon Short Line and Spokane and Palouse Railroads, at Pomeroy and Uniontown, as well as to Washington and Idaho towns. The population of Lewiston in 1890 was 849. There are 5 churches, 3 banks, 2 newspapers, a graded school with high-school department, and a convent school for girls. A complete system of electric lighting is being put in in connection with the water works. The new Court House cost \$30,000, and is one of the finest in the State. The industries consist of a brewery, a flouring mill with capacity of 40 barrels a day, a saw mill, and a planing mill. Twelve miles from the town there is a fine quarry of limestone. The real-estate transfers during 1890 aggregated \$500,000. Lewiston is the seat of a United States land office.

Lima, a city of Ohio, county seat of Allen County, in the great oil and gas belt of the northwestern part of the State, on the Ottawa river, 70 miles from Toledo. It had a population in 1890 of 15,981, against 7,567 in 1880, showing an increase of 111.19 per cent. During the past six years the growth has been rapid. The railroads are the Pittsburgh, Fort Wayne and Chicago, the Cincinnati, Hamilton & Dayton, the Lake Erie and Western, and the Chicago and Erie; and another was under contract in 1891, 400 miles in length, from the coal fields in the southeastern part of the State to northwestern Michigan. The oil development has reached 50,000 barrels daily, and there are large refineries, with pipe lines to Chicago, Toledo, Cleveland, and Pittsburgh, in addition to the immense quantity transported in cars. A natural-gas company has been in operation since 1887. The cost of the water-works plant of the city was \$400,000. The drainage and sewerage are excellent. An electric street railway has five miles of track, and \$40,000 have been expended yearly for twenty years on county roads, which are stoned or graveled. The court house, with stone jail and sheriff's residence on the same block, cost \$350,000, and was erected in 1884, of Ohio sandstone with red granite trimmings. The city building, erected in 1883, cost \$50,000, and is of brick, 3 stories high. The assessed valuation of the city in 1889 was \$4,141,512, while the tax rate was 32.6. Six banks (3 of them national) have a capital, in all, of \$600,000. One monthly, 3 daily, and 6 weekly papers are published. The industries include car shops of 2 railroads employing over 400 men, factories of oil-mill machinery and supplies, light locomotives, machinery, doors, sash, and blinds, carriage

materials, engines, carriages, paper mills, harness, leather, etc. Limestone is quarried for building stone and for the manufacture of lime, which is shipped in large quantities. In 1889 the county had 168 manufacturing establishments, with capital invested to the amount of \$3,243,700; 2,169 hands were employed, with wages of \$670,000, and a product of \$4,463,160. The materials used were valued at \$3,173,350.

Madison, a city and the capital of Wisconsin, county seat of Dane County, in the southern part of the State, 75 miles west of Milwaukee, and nearly the same distance from the western boundary line, on a narrow neck of land between Lakes Mendota and Monona, in what is known as the Four-lake Region. It is called the "Lake City." It is especially noted as an educational center, although as a trading and distributing point it ranks second to Milwaukee, lying in a rich farming country, well supplied with local manufactures. The railroads are the Chicago and Northwestern, the Chicago, Milwaukee and St. Paul, the Madison, Sun Prairie and Watertown, and the Madison and Portage. The population in 1850 was 1,525; in 1860, 6,611; in 1870, 9,176; in 1880, 10,324; in 1890, 13,426; showing an increase of 30.05 per cent. In 1836, when the site was selected for the capital, it was entirely unoccupied. The city has an altitude of 788 feet above sea level and 210 above Lake Michigan, and is a health resort for consumptives. The Capitol was built in 1860, at a cost of \$400,000, and has since been enlarged. It is an imposing edifice of white limestone, with a dome 200 feet above the basement. The park around contains 13 acres, finely wooded. The University of Wisconsin, on College Hill, was erected in 1850, and reorganized with an agricultural department and experimental farm in 1866, and in 1870 a college for women was added at a cost of \$50,000. In 1875 a hall of science was granted \$80,000 by the State, and from 1872 to 1876 annual grants were made of \$10,000 each. The total amount voted by the State for higher education (in addition to the grant by Congress of 72 sections of public land, in 1838) has been \$1,203,377.84. The total value of grounds, buildings, apparatus, etc., is \$925,000, and the total income \$189,870. Sixty-three instructors are employed, and there are 800 students. The celebrated Washburn Observatory is also connected with the institution. In addition to an excellent high school there are 6 ward schools, with fine buildings and all modern improvements. Fifty-four teachers are employed, and the total enrollment is about 1,800. The State and city have each free libraries, in addition to those of the university and of the State Historical Society, the latter numbering 58,000 volumes. There are 12 fine church buildings. The city owns the water works. Gas and electric lighting are in use, and there are 5½ miles of street railway. Madison is also the site of the State Lunatic Asylum and Soldiers' Orphans' Home. One large manufacturing plant has a capital of \$500,000, and there are about a dozen smaller ones. Plows, agricultural implements, wagons, and woolen goods are turned out, and there are 2 large flouring mills. Fine summer-hotels on the banks of the lakes are well patronized. Two daily, 9 weekly, and 1 tri-weekly newspapers, 6 monthlies, and 1 quarterly

are published. Four banks (1 national) had a capital of \$275,000 in 1891.

Manchester, a city of Virginia, in Chesterfield County, on James river, opposite Richmond, has a population of 9,246, showing an increase of 61.39 per cent. over 5,729 in 1880. By the United States census, the population of Manchester magisterial district, including the city, is 13,632. Prior to the civil war Manchester was the seat of many tobacco industries; since then its progress has kept pace with that of Richmond. The building improvements were valued at \$147,450 during 1890, 155 new houses having been completed. During 1891 the industrial plants erected and under way were valued at \$220,000. The shops of the Richmond and Danville and Atlantic Coast Line Railroads are at Manchester, and the city has telephone connection with Richmond, and also with Petersburg. Electric lighting is in use; river water is pumped to a tower and distributed in abundant supply; a perfect sewage system has been planned. The streets are paved and graded, \$100,000 having been expended for the purpose in 1890. One daily paper is published. The churches for whites number 7, and for colored people 4. The 2 public schools, 1 for whites and 1 for colored children, cost \$12,000 each, and there are private schools of high grade. The manufactures employ 4,500 hands, and include 2 large cotton mills, a paper mill, flouring mills, large iron and nail works on Belle Isle, in the rapids of the river, spike mills, 2 large tanneries, 2 sumac and bark mills, large oil works, 5 brick yards, 2 planing mills, a mattress factory, 2 sash and blind factories, a very large tobacco factory, fertilizing works, a furniture factory, granite and marble yards, an ice factory and ice-machine manufacturing plant, iron works, a canning and pickling factory, and a large job-printing office. Between the city and Richmond there are 3½ miles of horse and 3 miles of electric railway.

Meadville, a city, and the capital of Crawford County, Pa., on the eastern bank of French creek, and on the New York, Pittsburg and Ohio Railroad, at the junction of the Franklin and Oil City branch and the Meadville and Linesville Railway, 82 miles north by west of Pittsburg, and 34 miles south of Erie. The population in 1850 was 2,578; in 1860, 3,703; in 1870, 7,103; in 1880, 8,860; and in 1890, 9,502. On the western bank of French creek, opposite Meadville, are the villages of Kerrtown, Stringtown, and Vallonia borough; and adjacent on the north, south, and east are villages swelling the population of Meadville proper to about 12,000. It is in a fertile valley, surrounded by beautiful scenery. The extensive shops of the New York, Pittsburg and Ohio Railroad are here, and other important manufacturing interests, among which are boiler and engine works, machine shops, oil supplies, and foundries; while in the suburbs are glass works, a tannery, 3 breweries, and a large whisky distillery. It has 5 banks, and 1 daily and 5 weekly newspapers. The large publishing house of the "Chautauquan Magazine" is here, which is third in point of circulation in the United States. The Century Press, in connection with it, was established here in 1890, and publishes all the Chautauqua books, having also photo-engraving and

electrotyping departments, and employing 200 persons. Meadville has the best of graded public schools, a high school, a business college, a conservatory of music, and a public library of 5,000 volumes. Allegheny College, established here in 1816, has 250 students and a library of 12,500 volumes. The Meadville Theological School (Unitarian), established in 1844, has 4 resident and 4 non-resident professors, 30 students, and a library of 20,000 volumes. Meadville has 15 churches, 2 public hospitals, a system of water works, natural gas for fuel, and 2 electric-light plants. It was founded in 1788, and celebrated its hundredth anniversary in 1888, at which time it erected a pioneer monument on the public square; and in 1890 it erected on the same square a soldiers' monument at a cost of \$10,000.

Michigan City, a city of Indiana, the only lake port in the State, in La Porte County, near the southern extremity of Lake Michigan, 56 miles east of Chicago, 161 north of Indianapolis, and 12 from Laporte, the county seat. The population in 1880 was 7,366; in 1890, 10,776, showing an increase of 46.29 per cent. Four railroads run through the city, the Michigan Central, the Louisville, New Albany and Chicago, and the Lake Erie and Western, while the Elgin, Joliet and Eastern crosses every road running into Chicago. The site of Michigan City was purchased in 1832 by Major Isaac Elston, who subsequently realized a fortune by selling to a land company. In 1834 the first cargo of wheat was shipped from the harbor, the improvement of which was undertaken in 1864 by private enterprise. After the expenditure of \$100,526, the work was taken in hand by the United States Government in 1868. In 1872 the outer or harbor of refuge was begun, and in 1874 17,000,000 feet of lumber were received by the lake. At present not less than 150,000,000 feet are received, in addition to which amount, in 1889, 50,000 cedar posts, 350 cords of wood, 3,000 tons of pig iron, 120,000 barrels of salt, and 800 tons of coal were entered as receipts; while the shipments were 3,000 tons of general merchandise, in addition to hay, oats, sand, soft coal, and cattle. A regular line of steamers carries passengers and freight daily to and from Chicago, and during the summer there are three excursion boats a day. The lumber interest has been the most effective in promoting manufacturing industries, the work done in the planing department of one lumber company amounting to upward of \$30,000 in 1889. The city is also a great salt market, distributing between 150,000 and 200,000 barrels yearly. The plant owned by the Michigan Salt Association, of East Saginaw, Mich., possesses storage capacity for 50,000 barrels, and shipments are made throughout the State, and into Kentucky, Tennessee, Missouri, Louisiana, and Texas. The assessed valuations of real and personal property aggregate \$2,125,265, and there is a bonded debt of \$35,000. Two banks have a capital of \$375,000. There are water works and an excellent system of sewage. The streets are paved, and there are both gas and electric lights, as well as the Gamewell system of fire alarm, 2 telegraph and 2 express companies, a street railway, 2 weekly, and 2 monthly newspapers. The churches number 10, and there are 1 high and 3 public schools, having a total value of \$55,500, for which

the total expenditure is \$15,017. In 1889, 1,180 pupils were enrolled and 25 teachers employed, while 2 large school-houses were under construction. Four private schools, an academy, and a convent afford additional educational facilities. An iron bridge across the harbor, on the principal street, cost \$15,000. The city is the site of the State Prison north. Important manufacturing industries are 4 planing mills and lumber yards, a flour mill, 4 chair factories, refrigerator works, large car works (established in 1853), 2 hosiery mills, a brewery, cooper shops, a carriage wood-work factory, and a tannery. The Business Men's Association numbers 100 members. A United States life-saving station is located at the city, and "Hoosier Slide" is the most famous of the sand hills that surround it. There are many fine buildings and beautiful residences.

Moscow, a city of Idaho, the county seat of Latah County, in the western part of the State, in the midst of a thickly settled farming country. Timber in inexhaustible quantity exists on the mountains a few miles distant, and there are 8 saw mills in the county, which in 1890 sawed 15,000,000 feet of lumber. At the date of the erection of the county, May 14, 1888, the population of Moscow was 500; by the census of 1890 it was 2,861, and the place is rapidly assuming the proportions of a substantial city. Two railroads connect with the town, and its local trade extends over a large district. Latah County contains 1,100 square miles, three fourths of which can be easily cultivated, springs abounding and irrigation being unnecessary. The assessed valuation is \$2,755,295, and the debt in 1890 was \$45,813. An annual yield of grain and seeds aggregating three and a third million bushels has been attained. The receipts at Moscow for the year ending Dec. 31, 1890, included 450,000 bushels of wheat, 90,000 of oats, 60,000 of barley, and 200,000 of flaxseed. Two flouring mills at Moscow have an aggregate capacity of 160 barrels a day. There is also a planing mill, a sash and door factory, and steam brick works, the last employing from 50 to 75 men. The streets are graded and side-walked. There are 2 volunteer fire companies. The drainage is good, and water is supplied from artesian wells and pumped by 2 pumps of 65,000 gallons capacity an hour. There are 28 fire hydrants. Electric lights are in use. There are 2 weekly newspapers, and 2 banks and 8 churches. Major Anderson Post No. 5, G. A. R., is the strongest in the State, having a membership of over 100, and owns its hall, costing \$8,000, the work on which was performed entirely by Grand Army of the Republic men. The Northern Pacific Railroad is erecting a handsome passenger and freight depot and section house. There are 1 cigar and 1 candy factory, 4 blacksmith and wagon shops, and 40 business concerns. The new Court House cost \$25,000. By act of Jan. 30, 1889, the Legislature of Idaho established the State University at Moscow, appropriating \$15,000 to begin operations. The Seventh-day Adventists also were considering the building and endowment of a college in 1890. The American Trotting Association has a fine race track.

Nashua, a city of New Hampshire, in Hillsborough County, at the confluence of Merrimac and Nashua rivers, the water power of which

was rendered available by a canal 3 miles in length and 8 feet deep, constructed in 1825-'26. In 1823 the growth of the city began in consequence of the establishment of the Nashua Manufacturing Company (at present capitalized for \$1,000,000). Other cotton mills are valued at \$600,000. There is an embroidery company, a shearer manufacturing company, an iron foundry, an iron and steel company with capital of \$400,000, a card and glazed-paper company with capital of \$150,000, a lock company employing 200 persons, a furniture company an invalid furniture company, edge-tool works with capital of \$80,000, sheeting mills (employing 80 persons) with capital of \$300,000, a leather, a spool, bobbin, and shuttle company, and a freezer company with capital of \$100,000. The water-works were incorporated in 1853, and have a capital of \$250,000. Water is obtained from Pennecuck creek, and is forced two miles to a reservoir on a hill north of the city. The hydrants number 93. In 1889, \$26,460.18 were expended on highways and bridges, \$31,866 on sewers and drainage, and \$12,099 on electric street lighting. The assessed valuation of the city in 1888 was \$9,942,573, and in 1889 the debt was \$250,000, of which \$12,574 were for the Soldiers' and Sailors' Monument (of granite and brass, to soldiers and sailors of Nashua in the civil war), and \$17,529 for a new school building. There are 18 schools, in addition to a high school, in which 46 teachers were employed in 1887-'88, the enrollment being 1,841, and in private and parochial schools, 1,176. Of the last class 3 are Catholic. There are 10 churches. A legacy of \$15,000 was left to the city by Moses Hunt, of Cambridge, Mass., for a yearly course of free and instructive lectures. The city contains a home for aged women, a Young Men's Christian Association building, and several halls. Two daily, 2 weekly, and 2 monthly papers are published. The 7 banks (3 national) have a total capital of \$495,000. The railroads are the Boston and Maine, the Concord, the Nashua, Acton and Boston, the Nashua and Lowell, the Peterborough, and the Wilton. There are several miles of street railway. The population in 1880 was 19,397; in 1890, 19,311; showing an increase of 44.14 per cent.

Newburyport, a city of Essex County, Massachusetts, in the extreme northeastern part of the State, on the west bank of the Merrimac river, extending from its mouth 5 miles to the town of West Newbury; on the south and west it is bounded by old Newbury, from which it was set off in 1764. As a settlement it is two hundred and fifty-six years old, and it was chartered as a city in 1851. The river bank rises gradually in about one third of a mile to a height of from 70 to 100 feet, and then slopes to the long, low pastures back of the city. For two hundred years commerce was the leading industry, and during the eighteenth century this was one of the most important ports of the Atlantic seaboard, with one of the largest merchant fleets. On the breaking out of the Revolutionary War, and later, when the American navy was formed, it became a great central recruiting station, and large numbers of privateers were fitted out, several frigates being built on the Merrimac; \$2,500,000 were furnished by the town toward the

expenses of the war, and during the complications with France its losses amounted to nearly \$750,000. In a single month of 1805 importations were made to the amount of \$800,000; but the fire of 1811, followed by the War of 1812 and the restrictive acts of Government, gave a finishing blow to the foreign commerce. Since 1883 no ship has floated on the Merrimac, but prior to that date 2,000 vessels in all were built, with an aggregate tonnage of 403,000. Ship-building was especially active during the period of "clippers," from 1840 to 1860, 6 large yards being in operation employing hundreds of men. Among the vessels built here were the "Racer" and the "Dreadnought." Fishing was carried on for fifty years, 5,000 to 35,000 barrels of mackerel being inspected annually at the port, and over 1,000 men employed. Fishing vessels were constructed, and the manufacture of cordage was extensively carried on, there being 8 or 10 rope-walks in the town, with a product of nearly \$100,000 yearly. Printing and publishing, cigar-making, wool-pulling, tanning, and morocco-dressing, and the manufacture of combs, hats, chairs, and other industries, in small establishments, were largely carried on, and rum was made in 10 distilleries. At present the city has one of the 10 rum-factories of the United States, 8 of which are in New England, which manufacture 2,500 barrels yearly, valued at \$150,000. The manufacture of cotton goods was begun in 1834, and in 1887 3 large factories were in existence, employing over 1,000 persons, and operating 82,872 spindles and 1,789 looms. The yearly product of the shoe industry was nearly \$2,000,000, more than 2,000 persons being employed, with annual pay-roll of about \$750,000. Two silver factories, a foundry and machine works, a hat factory, a patent-leather company, 2 comb factories, a brick yard, and street car shops, are in operation; and other industries include the manufacture of steam ditching machines and paper boxes. The city has 4 national and 2 savings banks, is lighted by gas and electricity, and has an electric street railway connecting with Amesbury, Merrimac, and Plumb Island (a summer resort), also 21 miles of horse-car line. Water is pumped to a standpipe 35 feet high, at an elevation of 150 feet. Two pairs of duplex compound condensing pumping engines have a capacity of 4,000,000 gallons in twenty-four hours. The assessed valuation of the city in 1888 was \$8,074,737. The 13 public-school buildings, sites, etc., were valued at \$99,700, and 44 teachers were employed, while 1,600 children were enrolled in the public and 800 in private and parochial schools. The population of Newburyport in 1880 was 13,538, and in 1890, 13,947. Jetties are under construction by the United States Government to deepen the channel of the Merrimac on the bar.

New London, a city of Connecticut, county seat of New London County, on the western side of Thames river and 3 miles above its mouth, in Long Island Sound, half-way between New York city and Boston, and 6 miles from Providence, R. I. The harbor is the best on the sound, and one of the best in the United States, 3 miles long, 5 fathoms deep, thoroughly protected against storms, and against floating ice also, so that it is an especially fine wintering port. Fort

Trumbull, with 80 guns, guards the mouth, and a United States naval station is on the eastern bank of the river, above the city. Its marine activity is now confined principally to coasting trade. The first line of steamers to New York and New Haven was established in 1816, and the first railroad (there are now 3) was opened in 1850. The first telegraph, to Norwich, was operated in 1847. New London was founded by Gov. John Winthrop, Jr., in 1646, on lands of the Mohegan Indians, a branch of the Pequot tribe exterminated at Groton in 1637. In 1645, having obtained a grant including Fisher's Island and the year previous, he began erecting a house and arranged for the mining and smelting of iron ore. In 1658 the name was changed from Naumeag in honor of London, England, and a custom officer was appointed, probably the first in the colony. In 1710 it was made the chief postal station in Connecticut. Ship-building was begun in 1660, and a Society of Trade and Commerce was organized in 1730. In 1751 a fleet of 37 incoming and 62 outgoing vessels represented the commerce of the city, which suffered during the French and Indian War, and in 1776 (the military companies of the town having taken part in the battle of Bunker Hill) the first naval expedition of the colonial government fitted out at the port, which also furnished some of the most famous privateers. On Sept. 6, 1781, Forts Trumbull and Griswold having been taken, the city was plundered and burned by British troops under Benedict Arnold. In 1784 it received its city charter, among the first in the State, and commerce with the West Indies and other foreign ports revived, the first whaler also sailing in that year. In 1800, when the population was reduced to 4,995 whites and 195 colored by yellow fever, and during the War of 1812, the shipping interests were deeply involved. Since the civil war and the discovery of petroleum there has been a continual depression in whale fishing and in the foreign trade. New London is deeply interested in the seal fisheries of Alaska. The population in 1880 was 10,537; in 1890, 13,757; showing an increase of 30.56 per cent. A new steel bridge across the Thames is claimed to be the longest double-track draw-bridge in the world, having a draw of 503 feet, with 2 clear passageways of 225 feet each for vessels. The total length is 1,423 feet. The granite wharf of the Central Vermont Railroad has a length of 1,125 feet, with a width of 220 feet at the river and 150 feet at the shore end. Silk mills established in 1865 have a capital of \$320,000, and produce \$1,500,000 yearly; and a cotton-gin company, with works covering 87,000 square feet of flooring, employs 200 men and disburses between \$6,000 and \$9,000 monthly in wages. A steam woolen mill turns out 23,000 yards a month, and there are a steam saw mill, a printing-press, a paper-box, and a steam-heating apparatus factory, and brick yards with capacity of 18,000,000 bricks a year. Fertilizers, gear-cutting machinery, boilers, carriages and harness, and bed comfortables are manufactured, and there is also a ship-building and sail-making establishment and bottling works. The city is on the slopes of hills, affording fine sewerage and perfect drainage. Water is supplied from Lake Konomoc, 6 miles distant, water works estab-

lished in 1871 costing in all \$260,000. The annual supply is 530,286,000 gallons, and the height and force of the water give a head of from 80 to 170 feet, dispensing with steam-power fire engines. The fire department numbers 260 officers and men, and there is an electric fire alarm. There are 12 churches. In 1888-'89, \$40,000 were appropriated for school buildings, which number 7, with an enrollment of 2,040 pupils and 44 teachers. The Bulkeley High School for boys, costing \$40,000, was founded and is maintained by the bequest of a private citizen. It was opened in 1873. There are 3 national, 2 savings, and 1 union bank, with total capital of \$850,000. A beautiful new public library building was completed in 1890, with a capacity for 50,000 volumes. It contains also the New London County Historical Society. The Williams Memorial Institute contains also a fine library. There are a theatre, a new armory, a Masonic hall, an Odd-Fellows' hall, and other public halls, a customs house, erected in 1830, a fine new depot, and a court house. Gas and electric lights are in use, and 2 daily papers are published. New London is especially noted for the races which take place yearly on the Thames between the college clubs. Between New London and the Pequot House, a summer resort two and a half miles distant, to which there is a fine drive, lies Fort Trumbull, erected in 1849 at a cost of \$250,000. Fort Griswold, the scene of the bloody massacre of Sept. 6, 1781, which is commemorated by a shaft 127 feet high, is now but an earthwork, with a small battery.

Newport, a city and one of the capitals of Rhode Island, a United States port of entry at the head of Narragansett Bay, on the west shore of the island from which the State is named, 5 miles from the Atlantic Ocean, 19 from Fall River, Mass., 30 from Providence, and 162 (by steamer) from New York. The harbor is excellent, anchorage being 30 feet between Fort Adams (one of the largest fortifications in the country), on Brenton Point, and Goat Island, where are the headquarters of the torpedo division of the United States navy. On Coaster's Harbor Island is the Naval War College, established in 1884, and consolidated with the torpedo station by act of March 2, 1889. Nearly a quarter of a million dollars are disbursed yearly by the Government at these points. Newport was first settled in 1638-'39, and in 1640 the first public school in America was established (possibly the first in the world), accessible to all, supported by public charge. The city also claims the first Baptist church in America. In 1643 it was chartered with Providence and Portsmouth under the name of Providence Plantations, and in 1730 the population was 4,640. In 1738 more than 100 vessels were owned at the port, and in the French War, 1756-'63, 50 vessels were engaged in privateering, and more than 100 were lost by capture. In 1763-'64, 182 vessels were engaged in foreign and 352 in coastwise trade, the seamen numbering, including those in fishing vessels, 2,200. Until 1769 the commerce of Newport exceeded that of New York. In 1774, 30 distilleries were in operation; the population was 9,209, and there were 300 families of Jews. The oldest synagogue in the United States (erected in 1762) is found here, still in use, though but

few Jews now remain in the city. During the Revolution more than 1,000 men were furnished by the city alone to the war on the sea. Newport was taken by the British on Dec. 6, 1776, and held until Oct. 25, 1779, during which time the sufferings of the citizens were extreme; 480 buildings (300 dwellings) were destroyed, and on the withdrawal of the British all the public buildings were left untenable, with the exception of Trinity Church, the town records being carried away also and sunk in Hell Gate. In 1780 the city was the headquarters of Rochambeau and the French fleet. Touro Park, purchased by legacy of \$10,000 from Judah Touro, contains the famous old stone mill and a bronze statue of Commodore O. H. Perry. Among other notable antiquities are the State House, dating from 1739; the City Hall, built in 1763; the armory of the Artillery Company, organized in 1741; and the Central Baptist Church, 1735. Bishop George Berkeley, who resided at Newport from 1729 to 1781, writing his "Minute Philosopher" at the Hanging Rocks, presented an organ to Trinity Church, which was erected in 1725. Redwood Library, originated in 1730 and incorporated in 1747, contains 33,000 volumes, and there is also a public library with 26,000. The opera house, erected in 1867, has a seating capacity of 1,000. There is also a music hall, a Masonic temple, a Grand Army of the Republic, and several other halls, a Young Men's Christian Association, an Odd-Fellows' building, two asylums, a hospital, and a Business Men's Association. The city has 26 wharves, with daily boats to Providence in summer, and the Old Colony line to New York; also the Old Colony Railroad and the Newport and Wickford Railroad and Steamboat Company, as well as boats to Block Island and other points. The city property in 1889 was valued at \$700,375.25, and the total debt was \$243,000. The assessed valuation in 1888 was \$28,804,800. The street improvements in 1889 reached \$54,708.36, and \$19,908 were expended on sewers. The fire department had property valued at \$64,985. Gas works were established in 1853, and electric lights introduced in 1885. There are 14 public fountains, 18 churches and 2 chapels, and 10 public-school buildings valued at \$157,828, in which 42 teachers are employed, with over 2,500 pupils. In addition there is an industrial school for girls, and a parish school. In 1886 land for a public park was presented to the city by Hon. Levi P. Morton. In 1643 the first Quakers settled in the city, which for more than two hundred and fifty years has been the seat of the annual meetings of the Society of Friends. The Historical Society of Newport was founded in 1853, and the Natural History Society in 1883. Newport has also the oldest newspaper in the United States, founded in 1758 by a nephew of Benjamin Franklin. Two daily and 8 weekly newspapers are published, and also 1 monthly. There are 11 banks, 6 of which are national, with an aggregate capital of \$970,000. A system of electric street railway was opened in 1889. As a summer resort, Newport has 5 large hotels. There are 4 beaches for surf bathing, and the Hanging Rocks, Spouting Rock, and "Purgatory," a chasm 160 feet long, 50 feet deep, and with width at bottom of from 2 to 24 feet, at top of from 8 to 14 feet,

are famous. There are two grand drives, Bellevue avenue being 2 miles long. The principal industries are a brass foundry and several cotton mills. The population in 1880 was 15,693; in 1890, 19,457, an increase of 23.99 per cent.

New Westminster, a city of British Columbia, on Fraser river, 16 miles from its mouth and 12 miles from Vancouver, in the center of Westminster district, the finest agricultural region of the province. It is the fresh-water terminus of the Canadian Pacific Railroad, and the western terminus of the Westminster Southern (a continuation of the American Great Northern), being thus directly connected with all American and Canadian railway systems by the two great competing transcontinental lines. It is also the terminus of seven steamboat lines, and has direct and regular connection with Victoria, Nanaimo, Vancouver, Portland, and all settlements on the river. For several years the National Government has been carrying on extensive works for the improvement of the Fraser, which is navigable as far as the city by vessels drawing 22 feet of water, and will be open to those of the largest draught when these works are completed. Several cargoes of lumber and salmon, the principal exports, have been shipped direct to foreign ports. Three fourths of the fish-canning establishments of the province lie between the city and the mouth of the river, and during the year 1890 produced 246,000 cases of salmon, paying out in wages \$500,000. Four large saw mills lie within or adjacent to the city, with capacity of 500,000 feet in twenty-four hours, and a fifth has its foundations laid within the city limits. The only woolen mill of the province is also here; and there are several foundries and machine shops, sash and door and furniture factories, and a tannery. The assessed valuation in 1888 was \$862,511; in 1889, \$2,540,245; in 1890, \$3,577,815; and in 1891, \$5,287,520. The tax rate in 1891 was 15 mills on the dollar. During the first half of the year, \$700,000 were expended on new buildings, and the value of all erected during the past three years is placed at \$2,000,000. Water works are being constructed, at a cost of \$380,000, to supply water from a pure mountain lake. The electric-light works, for both public and private lighting, are owned by the city, which has expended \$60,000 upon them, and a similar amount upon a bridge to Lulu Island, famous for its farming lands. It also owns the steam ferry across Fraser river, costing \$27,000. During the past three years \$200,000 have been expended upon streets. There is a gas company, telephone service extending to Vancouver, and an electric street railway. A similar means of communication will shortly connect both Vancouver and Lulu Island with the city. There are free high and public schools, 15 churches, 2 banks, 2 hospitals, a Mechanics' Institute, and a Young Men's Christian Association building. The public library cost \$24,000, and parks and agricultural-exhibition buildings have cost the corporation \$60,000. The provincial penitentiary and lunatic asylum, the central prison for the mainland, and the Dominion and provincial land offices, are at New Westminster, and there is also a court house and a land-registry office. The city was founded in 1859. The population is upward of 4,000.

North Bay, a town of Ontario, Canada, incorporated in 1890 by act of Parliament, with a population of 2,500, is on Lake Nipissing, in Nipissing district, and is a divisional point on the main line of the Canadian Pacific Railroad, where the Northern and Northwestern divisions of the Grand Trunk join it. The workshops of the corporation established here pay out in wages \$20,000 a month. The Nipissing and James Bay Railroad has been surveyed to Lake Temiscamingue, 80 miles to the north, where are silver mines now in operation, but which have not been extensively worked hitherto, owing to the heavy cost of transportation. Vast forests lie along the line of the road, and large numbers of fur-bearing animals are reported to exist. The Ottawa ship canal, up Ottawa and Mattawa rivers to Lake Nipissing, and down French river to Georgian Bay, has also been surveyed, giving a short route to the seaboard from the Great Lakes. During 1890, 125 new structures were erected, in addition to a Masonic hall and opera house; and a system of water works is being put in, which will afford ample fire protection. A contract has been let for a public school to cost \$6,000. There are Presbyterian, Anglican, Roman Catholic, and Methodist churches, a weekly newspaper, a Mechanics' Institute belonging to the Canadian Pacific Railroad, and a court house and jail, the latter erected at a cost of \$12,000. The lumbering industry is promising, and Lake Nipissing, 60 miles long and 20 wide, affords the attractions of a summer resort.

Olympia, a city and the capital of Washington, county seat of Thurston County. It is one of the oldest settlements in the State, on Puget Sound, where Des Chutes river flows into Budd's inlet. The city is on the east side of the river, on a hillside sloping to the water's edge, in a framing of dense green. West of the center there is a depression, and the eastern side lies on the gentle slope facing the water and the higher portion. Olympia was platted in 1851, selected as the capital in 1853, and incorporated in 1859. The population in 1880 was 1,332; in 1890 the three wards contained 4,698 inhabitants. At Tumwater, one mile distant, is one of the best water powers of the State, Des Chutes river having a fall of 85 feet in a horizontal distance of 1,500 feet, in three distinct waterfalls, with rapids between. It has been utilized for many years, and in 1890 a dam was constructing across the river. Capital to the amount of \$209,100 was invested in manufactures in 1890, the output for 1889 being \$211,000, and that estimated for 1890, \$389,000; 226 persons were employed, with annual wages of \$80,500; 3 saw mills were in operation, with a daily capacity of 60,000 feet, and there were also a planing mill, a brewery, and a wooden-water-pipe factory, the only one of its kind in the United States, manufacturing pipe from yellow fir, the shell being only an inch thick, but, when wound with iron or steel, withstanding a greater pressure than the heaviest cast iron. Over 200 miles of pipe were made in one year and found a ready market throughout the West. The undeveloped resources of the county include valuable coal mines, only one of which has been opened, that at Bucoda, the output of which in 1889 was 42,675 tons. The present facilities are sufficient for 16,000 tons a

month. A belt of timber, from Olympia to the Pacific Ocean, extends from the Satsop west, and consists of 20 townships, having over 60,000 feet to the acre of fir and cedar. There are 10 mills in the county. Within three miles of the city good iron ore is found in large quantities and very accessible, and bog iron from five to eight miles distant. A quarry of light-blue sandstone has been opened seven or eight miles away, and native copper is found within eighteen miles. Boats can not reach the wharves of the city except at high tide, and a long wharf has been built out to deep water—4,000 feet. A narrow-gauge railroad meets the Northern Pacific at Tenino, and the Port Townsend Southern, constructing in 1891, will pass through the city to Portland, Ore. The Tacoma, Olympia and Gray's Harbor Railroad was building the same year to Aberdeen. There are several miles of logging branches also. Two or three steamers ply daily to and from the cities on the sound. During 1889 \$1,000,000 were spent by the city on public improvements, and since Jan. 1, 1890, over 500 houses have been put up. The Capitol is a frame building, two stories high, with a dome. There are also a court house, a county jail, 4 public parks, fair grounds with race track, 2 academies (1 Methodist and 1 Roman Catholic), 3 public schools with an attendance of 800, a Roman Catholic hospital, 7 churches, and a fine hotel. A street railway was incorporated in 1889, and there is a motor line to Tumwater. Two national banks have a capital of \$210,000. Two daily and 3 weekly newspapers are published. The State library has 6,000 volumes, and that of the Good Templars 2,000. The Masons, Odd Fellows, and Good Templars have fine halls.

Palouse City, a town of Washington, in Whitman County, in the eastern part of the State, 18 miles east of Colfax and 65 south of Spokane Falls, on the Spokane and Palouse Railroad (a branch of the Northern Pacific), where it crosses Palouse river. The population in 1888, when the railroad arrived, was 300. In the same year it was destroyed by fire, but it has been rebuilt, fire limits established, and by the census of 1890 had 1,119 inhabitants. It is an important grain and stock shipping point, but the leading industry is the manufacture of lumber, there being 3 large saw mills with cut of 20,000,000 feet yearly, and 2 planing mills, manufacturing sash, doors, etc.; 200 men are employed in the wood-working establishments. Two large flouring mills also are kept active. Four grain warehouses have a combined capacity of 350,000 bushels. Water works have been erected at a cost of \$8,000, a Holly pump raising water from a well to a 100,000-gallon reservoir 204 feet above the town. The sum of \$5,000 was expended in street grading during 1890, and there is an electric-light plant. The Christians, Methodists, Baptists, and Roman Catholics have church edifices. In addition to the public schools, in which 7 teachers are employed, and which are attended by nearly 400 children, there is a Catholic school of 50 pupils. The Catholics are also building a hospital. Two banks, 1 of which is national, have an aggregate capital of \$110,000. A weekly newspaper is published.

Parkersburg, a city of West Virginia, the county seat of Wood County, on the left bank of Ohio river, at the confluence of the Little Kanawha, 95 miles from Wheeling, and 12 miles below Marietta, 384 miles by rail from Baltimore and 195 from Cincinnati. It is the western terminus of the Baltimore and Ohio Railroad, and has also the main offices and shops of the Ohio River Railroad, the wealthiest in proportion to its mileage in the United States. The railroad bridge erected in 1869-'71, one mile and a third in length, cost more than \$1,000,000, and has six spans over the river in addition to approaches. Little Kanawha river is navigable for 38 miles, and with its tributaries flows through the best lumber districts in the State. Large quantities of poplar, walnut, oak, cherry, and other woods are brought to the city, where they are manufactured. The output of one mill goes altogether to Europe. A furniture company, established in 1880, employs 100 persons, and there is also a veneer and panel company, manufacturing sheets thin as tissue paper out of the heaviest logs, also all kinds of veneer, panels, bed rails, etc. Other industries are 3 iron foundries, 5 machine shops, 2 boiler shops, chemical works, 2 barrel factories, an oil and soap plant, a coffee company with capital of \$100,000, and bottling works. Within 25 miles lie the richest oil fields of the State, the Volcano yielding in 1889 71,500 barrels of crude petroleum. There are 5 oil refineries. Natural gas has been found in large quantities within a convenient distance, and a company was organized early in 1891 to bring it to the city for manufacturing. The population of the city proper was 6,582 in 1880 and 8,408 in 1890. The city limits have never been extended since the earliest days, and outside growth is therefore larger than that reported. The streets are well paved and shaded, and lighted with electricity and gas. The water supply is excellent, and the pressure in the hydrants is sufficient for fire protection without engines. Four banks, all national, have an aggregate capital of \$656,000. Two daily, 2 weekly, and 1 monthly newspapers are published. There are 6 public-school buildings and a high school. There are 12 churches, a court house, and a fine new Federal building.

Petersburg, a city of Virginia, formerly in Chesterfield, Dinwiddie, and Prince George's Counties, but now independent, 22 miles south of Richmond, at the head of tide-water on Appomattox river, 12 miles west of its confluence with the James. By the census of 1890 it has a population of 22,680, an increase of 1,024 since 1880. The Appomattox is navigable for large vessels to the wharves of the city, which is the natural market of a broad expanse of fertile country, and has the largest export trade for manufactured tobacco of any city in the United States. In 1885 the exports reached 4,840,118 pounds, an excess of 1,071,519 pounds over the year previous, and the home consumption amounted to 4,307,810 pounds. The sales and inspections at the five warehouses aggregated 15,865,856 pounds. Between \$300,000 and \$400,000 are invested in the industry, and 9 factories employ 2,097 persons, to whom \$332,147 were paid in wages in 1885. The tax paid to the United States was \$345,424.80. A large portion of the

pea-nut crop of Virginia and North Carolina is also handled in Petersburg; 6 factories for assorting, cleaning, and preparing the nuts for market being in operation in 1885, with output valued at \$900,000. During the season of 1890-'91, 1,750,000 bushels were sold, realizing \$1,250,000. The Atlantic and Coast Line Railroad and the Norfolk and Western pass through the city; while the Upper Appomattox Canal, for half a century one of the great feeders of the city, controls 100 miles of water-way with ample facilities for manufacturing enterprises, and is exempt forever from taxation by city, county, or State. Daily transportation is afforded by two lines of steamers. In 1889 the receipts of the city treasury were \$329,248, and the disbursements \$320,667; of which \$7,308 were for the fire department, \$15,511 for police, and \$24,500 for public schools. The assessed valuation of real and personal property in 1890 was \$9,706,445, and the rate of taxation \$1.60 per \$100. The total bonded debt of the city was \$1,223,200. Of this amount \$100,000 were incurred in building water works. Two high schools and 9 grammar schools employ 53 teachers; and 3,288 children are enrolled. There are also 2 female colleges. The churches number 16. The streets are well paved, with fine shade-trees, and there are many elegant residences and spacious parks, adorned with lakes of pure spring water, stocked with fish, and beautified with flowers and shrubbery. The manufacture of cotton in 5 factories is second only to that of tobacco. Fertilizers also are made, and the granite quarries furnish superior stone, which was used in building the Rip Raps, the United States Custom House in the city, and the State Central Lunatic Asylum in the suburbs. Much is also shipped for monuments. Three flour and 5 corn mills are in operation, the former run by water and the latter by water and steam power; and 3 bark and sumac factories have \$100,000 invested as capital and employ 150 persons, while 5,000 are occupied during several months in gathering and curing the leaves of sumac. Three foundries manufacture tobacco and cotton presses, locomotive and stationary engines, boilers, saw, grist, and sumac mills, elevators, steamboat works, dredges, castings, forgings, and all varieties of steam and hydraulic machinery, as well as agricultural implements, finding their markets throughout the Southern States. There are also silk mills, factories of bags, shirts, shucks, butter boxes, berry baskets and crates, hats, brooms, and candies, and bottling works. Gas and electricity are employed in lighting, and street railways run from the center to the suburbs of the city. There are 1 national, 1 savings, and 1 private bank, 2 public libraries, and 2 daily, 5 weekly, 1 bi-monthly, and 1 monthly paper. Petersburg was settled in 1733, and built on the site of an Indian village destroyed during Bacon's rebellion. It was incorporated in 1748, and a second time in 1781. During the civil war it was a strategic point of great importance.

Port Huron, a city of Michigan, the county seat of St. Clair County, on the most easterly point of territory in the State, at the head of St. Clair river and on both sides of Black river, three miles from Lake Huron. The first white settlement was made in 1686 (a French military

post) and maintained for two years. In 1790 7 French families settled on a favorite camping ground of the Indians. The place was originally known as Desmond, but the name was changed to Port Huron in 1837, and in 1857 the city was incorporated. In 1859 the Grand Trunk Railway was completed from Detroit, and the construction of the Port Huron and Lake Michigan Railroad was begun ten years later. In 1879 the first section of the Port Huron and Northwestern was opened to Crosswell, which in 1889 was purchased by the Flint and Père Marquette. "The Erie and Huron Railway terminates at Sarnia, Canada, opposite the city, and in 1891 the great submarine tunnel was opened between the two cities, connecting the Grand Trunk Railway of Canada with lines under Grand Trunk management in the United States (see "Annual Cyclopædia," for 1890, page 283). More than 75,000 cars pass through Canada yearly, requiring manifesting and inspection at Port Huron, and over 1,200 cars arrive laden with foreign merchandise under consular seal for transportation to the interior, valued at \$1,000,000. The city is the headquarters of the customs district of Huron, and the amount of duties collected in 1890 was \$54,545.53. For the year ending June 30, 1891, the amount was \$180,815.32, an increase of \$126,269.79, attributed to the building of the international tunnel. The exports to foreign countries in 1890 were \$10,447,553, and for 1891, \$9,026,239. The imports for 1890 were \$2,082,124, and for 1891, \$2,809,932. Thousands of immigrants enter the port yearly. For the year ending June 30, 1891, the arrivals of vessels at the port were 1,006, with a tonnage of 264,481 tons, and the departures were 1,032, tonnage 283,751. The total number of vessels owned in the district is 443; by the city proper, 58. Nearly 800,000 people are carried annually by the ferry companies. The territory covered by the city is about 5 square miles. The assessed valuation is \$4,738,750, of which \$255,900 is personal and \$3,914,850 real estate, on a valuation of 50 per cent. The population in 1880 was 8,884, and in 1890, 13,543. There are nearly 12 miles of streets, mostly paved with cedar blocks, but a few graveled, and the sewerage mileage is the same. Water works, costing \$300,000, were erected in 1873, and consists of two sets of pumping machinery, with 34 miles of mains and 174 fire hydrants. Two paid companies constitute the fire department. There are 3 handsome parks within the city limits—1 presented by the United States Government, of 21 acres, and another containing a hospital and home. Another park, 2 miles north, is reached by an electric railway. Another electric line of street railway is projected. There are 13 churches and 8 public-school buildings, with 42 teachers and an enrollment of 2,500 in 1890. There is also a business college, an academy (Catholic), and several parochial schools, also 1 private, the total enrollment being 700. The residences number 3,500, and there are 531 other buildings. There are several public halls and an opera house. Four banks (1 national and 2 savings) have aggregate capital of \$385,000. One daily and 5 weekly newspapers are published, also a monthly, the organ of the Michigan Maccabees. The United States Signal Office is in the Federal

Building, which was completed in 1875 at a cost of \$250,000. There is also a handsome city hall. The locomotive shops of the Grand Trunk Railway are in the city, and car construction and repair shops at Fort Gratiot, adjoining. Port Huron has 7 grain elevators, with a combined storage capacity of 1,450,000 bushels; 3 flouring mills, 3 dry docks (employing 190 men, with an output in 1890 of \$200,000), 2 planing mills, lumber yards, a sulphite fiber company (with capital of \$250,000, manufacturing paper from spruce wood), a paper-clothing company, 3 boiler shops, 2 engine works, 4 foundries and machine shops, 6 carriage and wagon shops, 2 broom factories, 4 marble works, 5 cigar and 2 candy factories, 2 breweries, 2 lime kilns, harness factories, a cold-storage plant valued at \$30,000, 4 bottling works, and other industries.

Portsmouth, a city and the only seaport of New Hampshire, a United States port of entry, and one of the two county towns of Rockingham County, on a peninsula 3 miles from the mouth of Piscataqua river, 57 miles from Boston by rail. The harbor, which is free from ice and has a depth of from 35 to 75 feet, is capable of containing 2,000 vessels. The Kittery Navy Yard, on Continental Island, half a mile distant, to which there is a ferry, is in Maine, but is regarded as belonging to Portsmouth. It is provided with a fine balance dry dock, 350 by 105 feet. It is one of the 4 United States naval stations now in use as construction yards, but is for wooden vessels only. It contains 170 acres. The first settlement at Portsmouth was in 1623, and thirty years later the township received its name. In 1849 the city was incorporated. The population in 1850 was 9,738, in 1870 it was 9,211, in 1880 it was 9,690, and in 1890 it was 9,827. Ship-building has always been the principal industry. Among the famous vessels built at the port were the "Falkland," in 1690, carrying 54 guns; the "America," of 50 guns, in 1749; and in 1777 the "Ranger," which, under the command of John Paul Jones, received the first salute to the American flag by a foreign nation. The railroads entering are the Boston and Maine, the Concord and Portsmouth, the Portland, Saco and Portsmouth, the Portsmouth, Great Falls and Conway, and the Portsmouth and Dover. The assessed valuation in 1888 was \$6,353,925. The debt of the city in 1890 was \$192,500, and receipts and expenditures were \$304,789.77 and \$204,424.97. The fire department has a membership of 126, and a fire-alarm telegraph. Water is supplied by private corporations. A gas company established in 1850 has a capital of \$77,000. Six banks, 3 of which are national, have a total capital of \$800,000, and there are 2 loan companies. Three daily and 3 weekly newspapers are published. The total value of the 12 public-school buildings in 1890 was \$178,100, and the expenditures for schools during the year were \$24,909. The sum of \$75,606.84 has been appropriated for new buildings, of which \$30,144.82 were expended in 1890; 45 teachers are employed, and the enrollment is 1,152. There are 6 private institutions, including a commercial college. There are 11 churches, 1 theatre, and numerous halls. The Athenæum has a library of 16,000 volumes, and there is a public library also of 9,381 volumes. The charities in-

clude a hospital, a home for indigent women, a female asylum, and a home for children. There is a board of trade. The manufactures embrace 2 breweries, 2 planing mills, a copper and brass foundry, a factory of hosiery and gloves, a machine and a shoe company, a soap factory, and the oldest marble works in New England. Many of the residences are old and surrounded by large gardens, while the streets are shaded with handsome trees. Among the notable antiquities are Gov. Wentworth's House (2 miles distant) which was erected in 1750, and St. John's Church. Portsmouth is the headquarters of the first United States lighthouse district, and has a life-saving station and a signal-service station; the custom house is in the post-office building. The United States courts are held here, alternately with Concord.

Port Townsend, a city of Washington, the county seat of Jefferson County, on Puget Sound, where that body of water joins the strait of Juan de Fuca, 90 miles from the Pacific Ocean, 40 from Seattle, 66 from Tacoma, and 35 from Victoria, British Columbia. It is on Quimper peninsula, which is 7 miles long and from 3 to 5 miles wide, washed by Port Discovery and Port Townsend bays on either side and has an available shore line of 25 miles. It is the port of entry for the Puget Sound district, and in the fiscal year ending July 1, 1890, 1,029 American vessels cleared for foreign and 181 for coastwise ports, the total tonnage, including foreign vessels, being 957,847 tons; while the entrances were, in all, 1,362 with total tonnage of 1,066,174 tons. Imports in bond were made during 1889 to the amount of \$792,341, the principal article being tea to the amount of \$656,789. The goods in bond in transit through the United States between foreign countries were valued at \$203,372. The exports reached \$2,043,344, of which the largest item was lumber, 107,326,280 feet, valued at \$1,209,717; 893,137 bushels of wheat, and 13,566 barrels of flour, aggregating \$797,626. The city is the center of the Alaska traffic. Daily steamboat connections are made with the Northern Railroad at Tacoma, the Union Pacific at Portland, and the Canadian Pacific at Vancouver. The Port Townsend Southern Railroad was constructing during 1891 to Portland, through Olympia, being completed to Quilcene in June. Its terminal grounds, wharves, and warehouses at Port Townsend are extensive and substantial. Two other roads are projected to the city from the east. A site has been recommended for a naval station and Government dry dock at the head of Port Townsend Bay, and the Government has reserved as sites for fortification Point Hudson, Admiralty Head, Point Partridge, and Marrowstone Point. A canal will also be opened between the city and Oak Bay, affording a more direct route to Hood's Canal, Seattle, and Tacoma. Port Townsend was first laid out in 1852. The principal growth took place between 1888 and 1890. The real-estate transfers for the year ending Sept. 1, 1890, were \$6,000,000. The building improvements projected and completed in the same period aggregated \$3,000,000. The population in 1880 was 917; in 1890 it was 4,558, the figures for Jefferson County being at the same dates respectively 1,712 and 8,368. The city has 3 lines of street railway—2 operated by electricity and

1 by steam motor—aggregating 14 miles in 1890. Gas and electricity are employed in lighting, and water works are constructing to cost \$500,000, bringing water by gravitation from Little Quilcene river. Preliminary steps have also been taken toward a perfect system of sewerage. There are churches of 7 denominations. There are graded public schools, and a normal and a business college. There are 6 banks (2 national) and a chamber of commerce. A rich country is tributary, in agricultural products, minerals, and especially timber. One company has \$50,000 invested in salting and smoking cod, halibut, herring, and salmon, for eastern markets. The only works in the State for the manufacture of pig iron are at Port Townsend, and furnish employment for 700 men. The production in 1889 was \$350,000. In 1889 engineering works were erected for marine engineering, steamboat construction, and repairs. A foundry, in operation for six years, has doubled its capacity, and employs 100 men. The cut of 2 saw mills in 1889 was 45,000,000 feet of lumber, 7,500,000 laths, and 307,855 pickets, and there are also sash, door, and blind manufactories, brick, terra-cotta, and cornice works, cigar factories, a brewery, and an ice factory. The United States Custom House and Post-office is estimated to cost \$250,000, the Court House \$100,000, a new public-school building \$60,000, and a large hotel \$100,000. The mean temperature in 1889 was 52.5°.

Pueblo, a city of Colorado, the county seat of Pueblo County, on both sides of Arkansas river, at the confluence of the Fountain qui Bouille, 40 miles east of the Royal Gorge, 120 from Denver, 170 from Leadville, and 635 from Kansas City, Mo. It is the metropolis of southern Colorado, and the largest manufacturing point in the State, save one. The Atchison, Topeka and Santa Fé Railroad was the first to reach the city in 1876, followed by the Missouri Pacific in 1887. It is now the center of five trunk lines, with outlets in all directions, and is the second distributing or supply point in the State. The population in 1870 was 666; in 1880, 3,217; in 1890 it was 24,558, an increase of 603.38 per cent. The assessed valuation of property in 1887 was \$4,641,695; in 1888, \$6,264,350; in 1889, \$9,444,630, and in 1890, \$11,381,947. In 1889, 28,237 car-loads of freight, representing 564,700,000 pounds, were received. The largest iron and steel works between Missouri river and the Pacific Slope are at Pueblo, capitalized at \$10,000,000. All the raw material used is produced within the State, from mines owned by the company. In 1890 two large blast furnaces, with a daily capacity of 240 tons of pig iron, were in operation, and another was constructing; the steel works were under improvement, and the plant consisted, in addition, of two 5-ton converters, a blooming mill, rail, merchant-bar, and nail mills, a pipe foundry, and machine shops. The output in 1890 was 23,436 tons of pig iron, 28,564 tons of steel blooms, 25,439 of steel rails, 31,500 of steel ingots, 8,390 of merchant iron, and 3,333 kegs of spikes. From 1,200 to 1,500 men were employed. During the year 800,000 tons of coal and 125,000 tons of coke were shipped from the company's coal mines. Three large smelters have an annual output of 200,000 tons, valued at \$9,500,000, and

employ 900 men, with a monthly pay roll of \$54,000. There are also large iron and brass foundries and shops, one devoted mostly to railroad castings, another to mining tools and machinery, another to brass and copper articles, one to wrought and cast iron fencing, and one to barb wire. Fire-brick works have been established, and there are nearly a dozen brick yards. In 1890 an artificial-ice factory was established, and 300,000 head of cattle were handled at the Union Stock Yards. The real-estate transactions for 1890 were \$10,491,541, and the expenditures for improvements were \$1,011,000, of which \$87,500 were for grading of streets, \$45,000 for water mains, \$60,000 for city water reservoirs and mains, \$25,000 for private water works, \$34,000 for bridges, and \$74,000 for street-car lines. In 1891 25 miles of electric street railway were in use. Electric lighting is supplied by three plants. The monthly cost of the fire department is \$3,000. The churches number 26, and there are 12 school buildings, the Centennial School building being one of the handsomest in the State. During 1890 \$45,000 were expended on school-houses. A fine opera house was also completed and a Board of Trade building. A public library was incorporated, and there is a flourishing Young Men's Christian Association. The city has 6 national, 1 savings, and 3 private banks, and 3 daily and 9 weekly and 1 monthly newspapers are published. The water power of Arkansas river, which has a fall of 17 feet per mile, is unimproved. The city is the geographical center of the famous coal fields of Las Animas, Huerfano, and Fremont Counties, the product of which, with El Paso County, in 1890, was 1,519,934 tons, or two thirds of the total product of the State. Within 30 miles of the city are 30 oil wells, and a pipe line is being laid to the city from Florence to convey 12,000 barrels a day. Iron ore, zinc, and valuable clays constitute the mineral resources. The Colorado Mineral Palace is a unique and magnificent building, of Egyptian design, in which a permanent exhibition of the minerals of the State is held. The State Insane Asylum is west of the city. The altitude of Pueblo is 4,660 feet.

Reno, a city of Nevada, the county seat of Washoe County, on Truckee river, in the western part of the State, 52 miles from Virginia City and 154 from Sacramento, Cal. On the line of the Central Pacific Railroad it ranks first both as a distributing and as a shipping point; it is also the terminus of the Virginia and Truckee and the Nevada and California Railroads. The population of the county in 1890 was 6,437, it being one of the two counties in the State that showed an increase in the decade. The population of Reno was 5,000. In 1889 Reno had 520 residences, fine business blocks, and county buildings. It is lighted by gas and electricity, and water is supplied from mountain streams to a reservoir with capacity of 26,000,000 gallons, with a fall of 182 feet, and pressure of 73 pounds to the square inch. There are 2 steam fire-engines. The University of Nevada at Reno was erected in 1885-'90, at a cost of \$58,000 for building and site. Bishop Whittaker's school for girls, Mount St. Mary's Academy (Catholic), 3 public schools, and a high-school building, costing \$25,000, afford additional educational

advantages. Six denominations have church buildings, and the Masons and Odd Fellows have fine halls. Two banks have a cash capital of \$350,000. There are 2 daily and 2 weekly newspapers. The State Insane Asylum, erected at Reno in 1881-'82, cost \$98,000; the State Prison, a stone building, begun in 1874, \$96,500; and the State Agricultural Society buildings, \$36,000. Annual fairs are held here, and there is a fine race track. The opera house cost \$30,000. Smelting and reduction works handle ores from all parts of the country, and there are 2 flouring mills, a soap factory, sash, door, and blind, powder, and broom factories, operated by steam as well as the water power of Truckee river. Two breweries and a planing mill complete the industries. The altitude of Reno is 4,480 feet, and the climate is dry and healthful. Various stage lines connect with agricultural and mining towns. The city is named in honor of Gen. Jesse L. Reno, who was killed at South Mountain, Md., Sept. 15, 1862.

Salem, a city of Oregon, the capital of the State, and county seat of Marion County, on the right bank of Willamette river, in a beautiful prairie, 52 miles from Portland, on the Southern Pacific or Oregon and California Railroad. Boats connect also with the Oregon Pacific and Oregon Railway and Navigation Companies at Albany and Portland. A Methodist mission, one of the first settlements in the county, was established by Jason Lee, 9 miles below the present site of Salem, in 1834, and the city is one of the oldest in the Northwest. It was incorporated in 1853, and became the State capital in 1860. It is handsomely laid out on an undulating tract of land, the streets being 100 feet wide and the blocks 330 feet square, exclusive of 16-foot alleys. Numerous beautiful residences, with fine gardens, city parks, and abundant shade-trees, render it exceptionally picturesque. A free bridge across the Willamette, 2,240 feet long, in three spans, and 86 feet above the water, connects Marion and Polk Counties. The population of East, North, and South Salem precincts in 1890 was 10,585. Fine water power is afforded by Willamette and Santiam rivers, conveyed in an 18-mile canal; and over \$1,000,000 were invested in manufacturing industries in 1890, viz., \$75,000 in a woolen mill, \$450,000 in two of the largest flouring mills on the coast, a stove foundry employing 250 men, a mill and lumber company, 2 planing mills, 2 sash and door factories, a fruit-canning establishment, a large evaporator and fruit-drying plant, a \$75,000 brewery, a large fence manufactory, 1 foundry and machine shop, 1 tannery, 2 wagon and carriage shops, a vinegar, fruit-preserving and pickle factory, 3 large cigar and tobacco factories, agricultural-implement works, tile works, and 2 brick kilns, in addition to a kiln at the Penitentiary. Patent fruit evaporators are also manufactured. The soil of Marion County is remarkably productive, wheat being the staple product, but of late years fruit-growing has increased extensively, all varieties of fruit that grow in the temperate zone reaching perfection. Stock-raising is also followed with profit. The winter weather lasts two to six weeks in December and January, and in summer the heat, tempered by sea breezes, is never excessive. The total tax for all purposes

is two cents on the dollar. In 1888 the assessed valuation of Salem was \$1,613,000. In 1889 there were 12 miles of graded streets and 16 of sidewalks. Water is obtained from the river by two distinct pumping plants, with capacity of 2,000,000 gallons each daily, and there are 36 street hydrants and 5 cisterns for fire protection. The fire department consists of 3 engine and hose companies and 1 hook and ladder. Electric and gas lights are in use. A street railway was incorporated in 1888. The city has 14 fine church buildings. The public-school property is valued at \$52,120; 17 teachers are employed, and 1,000 children enrolled. There are 4 public-school buildings, and also private and parochial schools. Willamette University was founded in 1853 by the Methodist Episcopal Church. Its faculty embraces 30 professors and instructors, and there are nearly 400 students. There is also a Catholic academy for girls and a business college. The State Institute for the Deaf and Dumb and the Oregon School for the Blind are at Salem, as is the Asylum for the Insane, occupying a tract of 290 acres, and accommodating in 1888 586 patients. The Orphans' Home is a fine building, and the Oregon Penitentiary has, within a wall inclosure 1,753 feet long and 16 feet high, 6 large brick structures for workshops, in addition to the main building, 260 feet long and 36 feet high, with a wing 85 feet in length. The Court House cost \$110,000. The State House, of iron, brick, and stone, was begun in 1873; it has a tower 180 feet in height, and is surrounded by a handsome park, covering 3 blocks. The Masons and Odd Fellows have libraries; there is a large opera house, 2 daily papers are published with weekly editions, and a monthly periodical is issued by the deaf-mute school. There are 4 banks (2 national), with capital of \$485,000. Five miles north of the city, at Chewama, is the Government Indian Industrial School. The mineral resources of Marion County consist of gold and silver in quartz, coal, limestone, and bog-iron ore. The lumbering industry is supplied from the forests of the Cascade slopes. The average annual rainfall is 42 inches.

Sherman, a city of Texas, the county seat of Grayson County, in the northern part of the State. It is the northern terminus of the Houston and Texas Central Railroad, and the northwestern of the St. Louis, Arkansas and Texas. The Texas and Pacific, in 1890, was constructing to the northeast through the coal fields of Indian Territory, and, in addition, the Denison, Bonham and New Orleans and the Wichita Railroads pass through the county, which contained 168 miles of track in 1888. In 1889, 195,000,000 pounds of freight were received and 120,000,000 forwarded. Fifty miles distant lie the great Ardmore coal fields, and the surrounding country is one of the richest agricultural districts in Texas. More than 600,000 acres are under cultivation, of which 80,000 were in cotton in 1889-'90, and 85,000 in corn, which produced 3,400,000 bushels. The business transactions of Sherman in 1889 amounted to \$8,500,000; and manufactures include one of the largest cotton-seed oil mills in the South, a large cotton gin costing nearly \$250,000, claimed to be the largest in the world, 3 flouring mills with daily capacity of 600 barrels, 3 iron foundries and machine shops,

marble works, steam saw mills, brick yards, planing mills, cigar, chair, furniture, soap, ice, broom, mattress, candy, and carriage factories. A fine public-school system is in operation, and the North Texas Female College and Conservatory of Music is here. There are also the Sherman Institute, St. Joseph's Academy (Catholic), Austin College (Presbyterian) for boys, and a commercial college. Two banks (1 national), have an aggregate capital of \$900,000, and 2 daily and 3 weekly newspapers are published. The water works have 15 miles of mains, and there are 2 lines of street railway, 1 horse and 1 electric; There are 7 churches, a \$40,000 opera house, a \$65,000 court house, and a \$95,000 jail. Electric lights are in use, and there is an adequate fire department. The population in 1870 was 1,439; in 1880, 6,093; and in 1890, 7,335. Within a very recent period the city has advanced in a remarkable degree from a small inland point to a commercial and shipping center. It is 67 miles from Dallas, 150 from Marshall, and 270 from Austin. The altitude is about 1,000 feet.

Snohomish, a city of Washington, the county seat of Snohomish County, in the northwestern part of the State, on Snohomish river, at the head of low-water navigation, 15 miles from Puget Sound, on the line of the Seattle, Lake Shore and Eastern Railroad, 28 miles north of Seattle, with which place there is a daily communication by steamer also. The city was founded in 1871 by E. C. Ferguson and W. B. Sinclair, and in 1880 had only 149 inhabitants. In 1887 it had 800, and it was incorporated in July, 1890, with a population for the precinct of 2,469. Snohomish County had a population of 8,514, against 1,387 in 1880. It has an area of 20,000 square miles, of which 800 have been surveyed. In 1880 the real estate was valued at \$218,715, and personal property at \$116,583. In 1890 the total assessed valuation was \$4,008,211, of which \$3,027,184 were real and \$671,431 personal property. The total tax of all kinds was less than 15 mills on the dollar. During 1890 incorporations were made in the county to the amount of \$985,000. Gold, silver, high-grade galena ore, coal, iron, the finest marble, sandstone, and granite exist, and placer mining has been carried on for twenty-five years on Sultan river, a branch of the Snohomish. The Seattle and Montana Railroad, a branch of the Great Northern, was built along the Sound on the western line of the county during the last six months of 1890, and the county has been bonded for \$80,000 to improve and extend public roads. In Snohomish, street improvements are under way to cost \$40,000, and an electric motor line of street railway is projected. Its electric-light plant cost \$30,000, and its water works \$15,000, while a pumping system, worth \$50,000, was constructing in 1891. It has a steam fire engine, a telephone system, 2 banks (1 national, with capital of \$50,000), 1 daily and 2 weekly newspapers. The buildings erected in 1890 include a brick court house, costing \$30,000; a public-school building \$14,000; a county jail with steel cells, \$3,000; two business blocks, \$10,000 and \$7,000; and a Catholic school and boys' home, \$4,000. In 1880 less than \$10,000 were invested in manufactures in the entire county. In 1891 the city had 8 saw and 8 shingle mills (one of the last being

the largest in the State) and 2 sash and door factories, most of them established since 1888, valued at \$475,000, and employing 400 persons. The output for 1890 was 40,000,000 feet of lumber, and 45,000,000 shingles, valued at \$600,000. The value of other manufactured articles was \$100,000. Five denominations have churches, and the Masons and Odd Fellows have large and convenient buildings.

South Omaha, a city of Nebraska, in Douglas County, 3 miles from Omaha, with which city and with Council Bluffs, Iowa, it is connected by an electric street railway. In 1885 the population was 150, and in 1890 it was 8,062. The railroads are the Missouri Pacific, the Chicago, Milwaukee and St. Paul, the Union Pacific, the Rock Island and Pacific, and the Elkhorn and Missouri Valley. In 1888 150,879 tons of freight was received and 88,607 forwarded. The building permits in 1890 reached \$648,400. Six miles of streets have been paved, and 20 curbed; and there are 10 miles of sewers, 2 viaducts costing \$75,000, and a complete system of water works. The assessed valuation of property in 1889 was \$9,068,973. Electric lighting is in use, and there are a telephone, 3 telegraph, and 5 express companies. Five banks (3 national) have a total capital of \$412,000. Five daily newspapers are published. The churches number 15, and there are 12 school buildings, attended by about 2,000 children. South Omaha claims to be the third largest packing center in the world. The aggregate business of 4 packing houses in 1890 was \$28,692,000, and it has also the third largest stock yards in the country. The receipts at these in 1890 were 606,699 cattle, 1,673,314 hogs, 156,186 sheep, and 5,318 horses. There are 40 stock commission firms. Additional industries are carbon works, 6 large brick manufactories, 2 breweries, and large cooper shops. One of the 2 public parks contains 70 acres. There is a paid fire department.

Sprague, a town of Washington, the county seat of Lincoln County, in the eastern part of the State, on the main line of the Northern Pacific Railroad, 41 miles west of Spokane Falls. It is the headquarters of the Idaho division of the Northern Pacific, and has large repair shops and round houses, the former employing 250 men and turning out new rolling stock, in addition to cars rebuilt. There are a handsome headquarters building, coal bunkers, ice houses, stock yards, and other accessories. The town is built in a narrow valley, and about a mile away begins the great plateau of the Big Bend country, the largest continuous body of wheat land in the Pacific Northwest, extending in an unbroken line to Columbia river. The receipts and shipments of three large grain elevators to Jan. 1, 1891, were in all 480,000 bushels, with a reserve of 250,000. The place is one of the most important shipping points for stock in eastern Washington. At one point near the city more than 100,000 sheep were sheared in 1889. The population of Lincoln County in 1890 was 9,312; of Sprague, 1,689. Brick buildings have been completed costing over \$50,000, and fire limits have been established. The streets are broad and well graded, with plank sidewalks. There is an electric-light company, with a plant valued at \$20,000. The water works consist of a Holley pump

raising water from a well to a reservoir of 100,000 gallons capacity 150 feet above the city, and there are 26 hydrants. The fire department is voluntary. The graded public school has a two-story brick building, to which an addition was built in the summer of 1890 at a cost of \$6,000. It has a high-school department and an attendance of about 400. There are 2 Catholic schools also. Five denominations have church buildings. One daily, one semi-weekly, and one weekly newspaper are published. There is one national bank and a building and loan association with capital of \$100,000. The Court House is a two-story brick structure, costing \$10,000. A public park of 25 acres has been laid out, adjoining Colville lake. The industries include a flour mill, 1 planing and 2 chopping mills, 2 brick yards, and a creamery and cold-storage company.

Springfield, a city and the capital of Illinois, county seat of Sangamon County, in the center of the State, 5 miles from Sangamon river, on the main line of the Chicago and Alton Railroad, 185 miles from Chicago. Seven other railroads branch out in 13 different directions, with 38 passenger trains daily. The capital was removed to Springfield from Vandalia in 1837, and the city was incorporated in 1840. It has an area of 4 square miles. The population in 1850 was 4,600; in 1860, 9,800; in 1870, 17,000; in 1880, 19,743; and in 1890, 24,963, showing an increase in the last decade of 26.44 per cent. In addition to its being a political center, it is important from an industrial point of view, as it is in a rich agricultural and coal-mining region. Thirteen large coal shafts are in constant operation in the vicinity. The water works owned by the city cost \$300,000, and have an average daily consumption of 2,500,000 gallons. There are 35 miles of mains and 148 fire hydrants. There are also 33 miles of sewers, an electric-light plant valued at \$75,000, 21 miles of paved streets, electric police and fire alarms, a telephone system, 2 lines of street railway, a paid fire department, and a public library of 13,700 volumes, in addition to the State Library of 36,000 volumes. Four daily, 7 weekly, and 3 monthly papers are published. The streets are broad and well shaded by maples. In 1889 the expenditure for the fire department was \$26,827. The taxable property is placed at \$20,000,000. There are 25 churches, many of them handsome edifices, an opera house, 2 female seminaries, in addition to a fine high-school building, a business college, and 11 public schools, in which 77 teachers are employed. The enrollment is 3,261, and the value of school property \$240,302. Two thousand children were also enrolled in private and parochial schools. A watch company, established in 1870, is the leading industry. It covers 16 acres of ground and employs 800 persons, turning out 400 watch movements daily. There is also a furniture factory, a foundry and machine shop, woolen, paper, and planing mills, engine and boiler works, and factories of trunks, carriages, fence, brooms, cigars, and tiles. The machine shops of the Wabash Railroad are here. The Capitol, completed in 1886 at a cost of \$5,000,000, is of Joliet stone, and is in the form of a Greek cross, 399 by 286 feet. From the ground to the top of the dome is 365 feet. The

interior is handsome, with marble finishings, frescoes, etc., and contains a memorial hall, on the ground floor, in which are the battle flags of Illinois regiments during the civil war and other relics. There are also museums of agriculture and natural history accommodated within, as well as the Supreme Court and State Board of Health. The Court House, formerly the State Capitol, is a three-story building, which cost \$320,000, and there is a Federal building and an exceptionally handsome executive mansion. The home of Lincoln, owned by the State, contains a collection of memorials of him. The Lincoln monument, of granite from the quarries of Biddeford, Me., cost \$240,000. It was completed in 1871. The statue, of bronze, as are the four groups at the corners, was the design of Larkin G. Mead. It was unveiled Oct. 15, 1874, in the presence of the Army of the Tennessee. The artillery and cavalry groups were placed in position in 1882 and 1883, the infantry and naval in 1887. Sangamon Fair Association has grounds outside the city. Five national banks have a capital of \$1,135,500, and there is a loan and trust company with a capital of \$60,000.

Stamford, a town and borough of Connecticut, in Fairfield County, on Long Island Sound, at the mouth of Mill or Rippowam river, 78 miles distant from Hartford and 34 from New York city. The railroad connecting those two cities passes through the place, and there is also a daily steamer to New York. In population it is the eleventh and in wealth the seventh city of Connecticut. Originally a Puritan settlement, it had its origin in a dispute among the colonists at Wethersfield, which led to the removal of the dissatisfied minority to lands of the Rippowam Indians and the purchase of the site of the present town (named for Stamford, Lincolnshire, England). On Dec. 22, 1841, the second centennial of the town was celebrated. In 1830 its borough charter was obtained, amended in 1882, the present limits extending 10 miles north and south and from 5 to 6 miles east and west. In 1848 the railroad was opened, from which time the growth of population has been steady. In 1820 it was 3,284; in 1850, 5,000; in 1880, 11,298; and in 1890, 15,700, an increase of 39 per cent. The taxable property is placed at \$8,863,486, and in 1890 the rate of tax was 12 mills. A system of sewerage has been completed at a cost of \$125,000, and during 1890 \$20,000 were expended in macadamizing the principal thoroughfares. The cost of local improvements for the year was \$382,000, of which \$29,000 were for extensions of the water works and \$40,000 in additions to the electric-light plant. In 1889 \$150,000 were expended by the gas company for a new tank, of 200,000 feet capacity, and mains. In 1886 an appropriation was secured from Congress for improvements of the harbor of Stamford, which were carried on until April, 1891; a new survey has also been provided for. In 1886 a street railway company was incorporated, with capital of \$100,000. There are 4 banks, 2 national, with aggregate capital of \$400,000, and 2 savings, with aggregate assets of \$4,000,000; 1 trust company, with paid capital of \$100,000; and 1 safe-deposit company. Seventy-five teachers are employed in the public schools; there is a

high school, and, in addition to numerous small primary institutions, there are 2 private seminaries for young ladies and 1 for boys. There is also a business college, and a Roman Catholic school, free. The churches number 14. A board of trade was organized in 1890. The manufactures include Yale locks, differential pulley blocks, crabs, winches, cranes, etc., post-office equipments, carriages and wagons, curled hair, piano castings, billiard tables, phosphor bronzes, hats, and shoes. There are wood-working companies, 2 stone and marble works, 1 foundry, which, in addition to castings for agricultural implements and machinery, turns out stoves and grates, a pottery for manufacture of stove fittings, fire bricks, drain pipe, and other pottery goods, and 1 camphor and wax factory. One of the 32 profit-sharing manufacturing establishments in the United States is at Stamford. The oyster industry is prominent, and of recent years oysters have been exported to Europe. Special pains have been taken of late to improve and beautify the streets and parks, and the town is one of the most charming in New England. The Town Hall cost \$150,000, and, in addition to an auditorium seating 1,000 persons, contains the post-office and the courts. Four weekly papers are published.

Texarkana, a city of Arkansas and Texas jointly, the county seat of Miller County, Ark., and Bowie County, Tex., on the State line, 25 miles from the northeast corner of Louisiana and the same distance from the southeast corner of Indian Territory. The site is at the eastern apex and highest point of a plateau formed by Red and Sulphur rivers, 10 to 25 miles wide, and 600 to 700 feet above sea level. Rich bottom lands, from 5 to 10 miles wide on either side, produce 2,000 pounds of seed cotton to the acre, while many kinds of hard and soft timber are found on the uncleared portions. The output of yellow pine from mills in the immediate vicinity in 1889 was 250,000,000 feet, and the hard wood is still untouched. The city is one of the largest lumber centers of the South, and also an important railroad center, having eight roads, and is moreover the terminus of the St. Louis, Iron Mountain and Southern Railroad; 28 passenger trains arrive and depart daily, and over 1,000 men are employed. The population (in both States) in 1890 was 6,380, against 3,223 in 1880. There are 20 miles of graded streets, and 2 systems of water works, with capacity of 6,000,000 gallons daily, gas and 2 electric-light systems, 4 miles of street railway in operation and 4 more in process of construction, and churches of many denominations, with property valued at \$80,000. Three banks, all national, have an aggregate capital of \$325,000. One daily, 3 weekly, and 2 semi-monthly newspapers are published. The tax rate is from $1\frac{1}{4}$ to 2 per cent. in the city. The Union depot cost \$75,000, and \$100,000 have been appropriated by Congress for a Federal building. There are a court house and an opera house. In addition to the public schools, there are 2 colleges.

The Dalles, a city of Oregon, the county seat of Wasco County, on the south bank of Columbia river, 206 miles from its mouth. The main line of the Oregon Railway and Navigation Company (now a branch of the Union Pacific Railroad)

runs through the first street of the city, near the high-water line, and the passenger and freight depots are in the eastern portion. The principal business center is a mile and a half west of the foot of Tumwater Rapids (11 miles in length), where begin the great salmon-fishing industries of the county. The first salmon cannery was established in Oregon on the Columbia, twenty-two years ago, by William Hume, the pack being 4,000 cases. The catch of Wasco County during 1890 was 115,000 cases, amounting to 8,050,000 pounds, to which are to be added 750,000 pounds of fresh fish shipped in ice to Eastern markets. The method of catching is by wheels, all superfluous fish being released by a tank into the open current, and allowed to ascend the river to the spawning grounds. On the Wasco side of the river there are 19 such wheels, and 4 in Washington also find their market here. The entire process of fishing and canning is completed in two hours. Wasco County, which since its organization in 1854 has been subdivided into 13 counties, comprises 3,200 square miles, of which 954 are at present withheld from filing or settlement; 30 to 50 per cent. is excellent farming and grazing land; the rest is covered with valuable timber. The total assessed valuation is \$3,753,066, and the indebtedness \$927,900. The imports of The Dalles for 1889 were 22,800 tons of general merchandise, 6,000 tons of wood and lumber, and 3,000 tons of coal. The exports were 5,864,400 pounds of wool, 2,000,000 bushels of wheat and 445,625 of other grains, 500 car-loads of live stock, 300 of lumber and wood, and 1,000 tons of fruit and mill produce. On the western boundary of the city flows a creek supplied from the snows of Mount Hood. On it a milling company, with capital of \$125,000, operates 15 miles in the timber, floating wood and sawed lumber into the city by means of a large V-shaped trough, made of timber, 16 miles long. Fifty men are employed in mills which by the same water power plane and recut the timber. The city is the site of a United States land office and a signal station. There is a board of trade, and water and electric-light works are in use. The railroad shops employ 250 men, and there are large flouring mills. Daily steamers ply between the city and Cascade Rapids, 43 miles, and make connection, after a portage of five and a half miles by rail, with other steamers, to Portland. There are 6 churches, 3 large public schools, an independent academy, and a Catholic college. Two national banks have an aggregate capital of \$100,000, and there is a private bank with capital of \$150,000. The elevation of the city is 350 feet; the average annual rainfall is 21.06 inches.

Tiffin, a city of Ohio, the county seat of Seneca County, in the northeastern part of the State, 42 miles from Toledo, on both banks of Sandusky river, 50 miles from its mouth, in a rich agricultural region. It has 3 railroads—the Baltimore and Ohio, the Indiana, Bloomington and Western, and the Northern Ohio. The population was 7,879 in 1880 and 10,801 in 1890, showing an increase of 37.09 per cent. The assessed valuation in 1889 was \$3,379,690, with a tax rate of 29.1. Two daily and 5 weekly newspapers are published, also 3 monthlies. Three banks (1 national) have a total capital of

\$375,000. Five and a half miles of street railway were opened in 1888. In addition to 5 public-school buildings, valued at \$125,000, in which the enrollment is over 1,300 and 30 teachers are employed, there is a high school and a college of Ursuline Sisters. The city is the site of Heidelberg College, opened in 1850, which has 5 professors and instructors; also of Heidelberg Theological Seminary, belonging to the Reformed Church, established in 1851. The manufactures include bolt and nail machinery, iron and tool works, churns, washboards, woolen goods, buggy and carriage-building materials, bent wood, agricultural implements, well-boring machinery, stoves, furniture, sash, blinds, and doors. There are foundries and machine shops, stone and tile works, a box factory, all kinds of light cooperage factories, and 2 breweries.

Tyler, a city of Texas, the county seat of Smith County, in the northeastern part of the State, at the intersection of the main line of the St. Louis, Arkansas and Texas Railroad and the Troupe and Mineola branch of the International and Great Northern. It is also the beginning point of the Kansas and Gulf Short Line, which, running southeast, passes through a fine iron-ore region and the long-leaf yellow-pine forests of the Sabine valley. A road has also been projected from the coal fields of Indian Territory to Alexandria, La., passing through Tyler. The division roundhouses and machine shops of the St. Louis, Arkansas and Texas Railroad, employing 500 men, are here, as are also the general offices, roundhouses and machine shops of the Kansas and Gulf Railroad. The city is a shipping point for cotton and fruit, and is beginning to assume importance as a manufacturing point. The commercial transactions, exclusive of cotton, during 1890 were \$3,000,000. The assessed valuation of property, real and personal, in Smith County in 1888 was \$5,617,042. There are 3 banks (2 national and 1 private) with aggregate capital of \$400,000. Three large public-school buildings—2 for white and 1 for colored children—are valued at \$50,000, the attendance being on an average 1,000 out of a total enumeration of 1,395. The public buildings consist of a United States court and post-office building costing \$35,000; a city hall which cost \$20,000; an appellate court building, \$10,000, county-court buildings valued at \$50,000; and an opera house which cost \$50,000. During the fruit season over 50,000 cases are shipped yearly from the canning establishments at Tyler, and there are also a car and lumber company, employing 150 men, with a yearly product valued at \$1,500,000; a leather company with capital stock of \$60,000 and output from the tannery of 50,000 ricks of leather yearly; a chair factory; a foundry and machine shop; a harness and saddle and a horse-collar factory. The city has a board of trade. The population was 2,423 in 1880, and 6,908 in 1890, showing an increase of 185-10 per cent. Eight miles of street railway are in operation, with capital of \$100,000. One daily and 2 weekly newspapers are published.

Waco, a city of Texas, county seat of McLennan County, near the center of the State, in a rich agricultural country on either bank of Brazos river, at the mouth of the Bisque, 95 miles from Austin and 250 from Galveston. The

river, which is navigable most of the year, is spanned by a suspension bridge erected at a cost of \$140,000 in 1871. The railroads are the Houston and Texas Central, the St. Louis, Arkansas and Texas, and the Missouri, Kansas and Texas, and in 1890 Waco was the terminus of a division of the San Antonio and Arkansas Pass Railroad. Each of the three great trunk lines has its own depot, and the city is a shipping point for cotton, wool, grain, and live stock. In 1888 the assessed valuation of real and personal property in the county was \$15,197,522, and the total debt was \$27,391, the rate of taxation being 25 cents on \$100. In 1885 the assessed valuation of Waco was \$4,300,000 and in 1890 over \$8,000,000. Fifty thousand acres in the county produced 20,725 bales of cotton, valued at \$963,712 in 1888. The city is regularly laid out and presents an appearance of uniformity. The streets are wide, well paved and shaded, lighted with gas and electricity, and there are 14 miles of electric street railway. A rapid-transit line was under construction the same year to encircle the city. There are two systems of water works, one with reservoir capacity of 6,000,000 gallons, and another, an artesian, which by initial pressure lifts the water from 5 wells, with aggregate capacity of 5,000,000 gallons, into stand-pipes 90 feet high on a hill 85 feet high. The temperature of the water is 103° F. The population was 7,295 in 1880 and 14,445 in 1890, showing an increase of 98-01 per cent. Two daily and 3 weekly newspapers are published, also 3 monthlies. Seven banks (4 national, 1 savings, and 2 private), have an aggregate capital of \$1,245,000. There are an opera house and a public hall. The 8 public schools have an enrollment of over 2,300 pupils and 36 teachers. Waco Female College (Methodist), founded in 1857, has 160 pupils and 11 teachers. Baylor University, one of the largest coeducational institutions in the United States, established in 1846, has over 400 students and 22 professors and instructors. There is also a commercial college and a convent. The churches number 14. In 1888 58 manufacturing establishments had a capital invested of \$1,272,500, employing 911 hands, with wages of \$337,660, and yearly output of \$2,031,000. Woolen mills, with a capital of \$400,000, were twice enlarged in the six years prior to 1891, and a cotton factory, with a capital of \$100,000, manufactures heavy goods, tents, wagon sheets, collar pads, etc. There are 2 flouring mills, 2 cotton-seed-oil mills, 2 cotton compresses, 2 foundries, 4 carriage and wagon works, 4 brick and tile and 1 lime manufactories, 4 factories of saddlery and harness representing a capital of \$200,000, 2 planing mills, 2 ice factories, 2 canning establishments, marble works, and minor industries. In 1890 \$20,000 were expended on the streets, which are paved with cedar blocks, and the cost of public and private buildings erected that year was \$750,000.

Waltham, a city of Massachusetts, in Middlesex County, 9 miles from Boston, on both sides of Charles river. It had a population of 18,707 in 1890, against 11,712 in 1880, showing an increase of 59.73 per cent. It is especially noted for the manufacture of watches, having the oldest and largest factory of the kind in the United States, upon which the growth of the

city has been dependent since its establishment in 1853. The large building extends over 800 feet, with wings, towers, courts, and offices, and is bordered with lawns, shrubbery, and flowers. No strike has ever occurred among the operatives, of whom more than 2,700 are employed, of whom 1,100 are women, the majority being about twenty years of age and unmarried. No children are employed under sixteen years of age. Only 120 are of foreign birth. Boarding houses are maintained by the establishment, and more than one fourth of the operatives own their own homes. The sanitation is excellent, and the death rate less than one half of 1 per cent. per annum. There is a mutual relief association belonging to the factory for visiting the sick, and numerous clubs are maintained for entertainment and instruction. During midsummer a fortnight's vacation is granted to all employés. The wages average \$15 a week for men and half that amount for women. The highest price paid to women is \$2.50 a day and to men \$5. The capacity of the works is 2,000 watches a day, and to 1889 4,000,000 had been manufactured. More than 150 separate pieces are required for an ordinary watch, and more than 3,700 operations to make a stem-winder. The mayor in 1889 was a foreman in one of the departments of the watch factory. Four of the aldermen were also employed there, and also two directors of the public library and the chief of the fire department. Many workmen and some workwomen are stockholders in the company, and the factory owns a band which gives performances in the park. The assessed valuation of Waltham in 1888 was \$12,298,745, and in 1889 \$13,958,330, of which \$10,700,200 was real estate. It has 3 banks, 1 of which is national and has a capital of \$150,000. Two daily and 3 weekly newspapers are published. The expenditure for police in 1889 was \$10,850. The railroads are the Fitchburg and the Boston and Maine. The churches number 10. There is a hospital, incorporated and organized in 1885. The library contains 16,810 volumes. The streets are lighted with gas and electricity, and there are 38 miles of water mains. The 14 public-school buildings are valued at \$245,202; 64 teachers are employed and the enrollment is over 3,000. A street railway connects the city with Newton. The first large cotton mill in the United States was established at Waltham in 1814, and is still in operation, with a bleaching and hosiery department. The other industries include 2 iron and brass foundries, 3 planing mills, 2 wagon works, 1 brick, 1 box, 1 blind-fastener, 2 chalk, 1 chemical, and 2 cigar factories, also an incubator company.

Waterbury, a city of Connecticut, in New Haven County, near the center of the State, two and a half hours distant by rail from New York city and five hours from Boston. It is on Naugatuck river, and is built upon hills having an altitude of 700 feet. The population in 1880 was 20,270, and in 1890 had increased to 33,202. The city was incorporated in 1853, when it had a population of 5,137. In 1860 the manufacturing capital was \$3,750,000, and in 1890 it was \$8,500,000, employing 6,000 persons and disbursing annually \$3,000,000 in wages. The general valuation was \$31,000,000, property being listed on an average

of not over 35 per cent., and taxation is at the rate of 10 mills. The growth by houses is 400 a year. The city appropriations for 1890 were \$226,000, of which \$43,000 were for streets, \$15,000 for sewers, \$12,000 for the fire department, and \$22,000 for police. The city property is placed at \$1,432,000—including schools, \$760,000; water works, \$300,000, the rents from which reach yearly \$42,000; and sewers, \$150,000. The bonded debt is \$499,000 (with \$120,000 due the city), and the floating indebtedness \$98,000. Four railroads enter the city, and there are 10 trains daily to and from New York, 8 to and from Boston, and 12 to Hartford. Tide water is reached at Wilson's Point, Long Island Sound, 40 miles distant, at Cromwell, on the Connecticut, and at New Haven and Bridgeport, each 30 miles away. There is a large union depot, and 350,000 tons of freight are handled yearly. Reservoirs on high hills at some distance from the city supply 1,500,000 gallons of water daily, having a combined capacity of 200,000,000 gallons. In the lower portion of the city the pressure is very great. Electric lights are in use, and there are 3 telegraph lines. A horse street railway is in operation, and 2 lines of electric roads have been chartered. Four national banks have a combined capital of \$1,000,000. There are 1 State and 3 savings banks, the deposits in the latter amounting to \$3,000,000. A board of trade was organized in 1889. In the center district alone are 16 public-school buildings, and 78 teachers are employed. The school enumeration for 1889 was 6,998. In addition to the high school are 6 public evening schools. There is a Catholic diocesan school for girls, a convent with a large school in connection, a parochial school, 2 others, and an industrial school for girls under the management of Protestant women. There are 14 churches, many of them supporting missions and chapels in the suburbs. The Bronson Free Library is claimed to be the largest and wealthiest in the State, numbering 44,000 volumes. A city hospital has been erected, largely by popular subscription. Three daily and 4 weekly papers are published. The city is practically a county seat, the district court covering several townships, and the Superior Court holding both criminal and civil terms. It is the headquarters of the Second Regiment, Connecticut National Guard, and has 2 of the largest companies. There are 3 large hotels, an armory, a rink, 3 halls, an opera house, and a handsome Masonic temple. A driving-park association has been lately incorporated. A steam-boiler inspection company and an indemnity association have headquarters at the city. Waterbury is known as the "Brass City," from its large brass-working establishments, several of which cover from four to five acres each. There are large rolling mills, and machine shops for fine and special machinery for automatic operations. Pins, needles, hosiery, webbing, lamps, malleable iron, silverware, electric goods, aluminum, carriages, beer, paper boxes, and blank books are produced, while watches are a specialty, and a large percentage of all the buttons used in the world, of whatever material, are made here. The manufacture of buttons and clocks at an early period led to the development of the brass industries. The city park is shaded

with fine elms and contains a costly drinking fountain and a monument to the 900 soldiers furnished by Waterbury during the civil war.

Wheeling, the largest city in West Virginia, the county seat of Ohio County, in what is known as the "Pan Handle," on Ohio river, and on an island in that stream connected with the mainland by a suspension bridge 1,010 feet long. It is known as the "Nail City" from its leading industry, and is surrounded by a rich and well-cultivated agricultural region. For the most part the site is on bottom lands 40 to 50 feet above low water in the river, and the altitude is about 650 feet above sea level. Bluffs on the east rise 400 feet above the river, which is navigable to Pittsburg. The city was first settled in 1769 by three brothers named Zane, thence called Zanesburg, and in 1774, in consequence of apprehended Indian hostilities, Fort Fincastle was erected, the name of which was changed two years later to Fort Henry, in honor of Patrick Henry, the first patriot Governor of Virginia. The structure, which was near the present intersection of Main and Eleventh Streets, was a parallelogram, 150 by 75 feet, surrounded by palisades 15 feet high, the strongest defense on the Western frontier next to Fort Pitt. It was never regularly garrisoned, but the defense was intrusted to settlers. In 1777 it was besieged and in 1781 was attacked, the savages and their allies being repelled. In 1782 it was again besieged by 300 Indians and 40 British soldiers, 42 men withstanding a siege of thirty-six hours. Here the last blood was shed (of one man wounded) and the last gun fired in the War of the Revolution. Soon afterward the name was changed to Wheeling. In 1796 it contained 40 houses. It was incorporated as a town in 1800, and as a city in 1836. In 1863 it was made the capital of the State on its admission to the Union. The seat of Government was changed to Charleston in 1870, restored in 1875, and again transferred in 1885. The population was 500 in 1800, 1,567 in 1820, 8,793 in 1840, 20,000 in 1860, 23,000 in 1870, 30,737 in 1880, and 35,013 in 1890. In addition to the river, transportation is afforded by the Baltimore and Ohio Railroad, two divisions of the Pennsylvania system, the Cleveland, Lorain and Wheeling, connecting with the Lake Shore and the Ohio River Railroad. Two million dollars have been expended by the Wheeling Bridge and Terminal Company on a bridge across the Ohio (one of the arches of which is the largest span save one in America) and three double-track terminals. Another bridge was constructing in 1891, costing \$150,000. The superior quality and abundance of coal near Wheeling place her beyond competition in the manufacture of nails, and the product of 8 nail factories is used throughout the country. The first iron mill was established in 1834, and the first exclusive nail mill in 1847 with 40 machines. Seven nail mills in 1890, with 1,140 machines, had an aggregate capital of \$4,100,000, and an annual capacity of 2,830,000 kegs of steel nails. Three Bessemer steel plants represent a capital of \$1,300,000, producing 210,000 tons of soft steel yearly. There are also 3 sheet and 2 bar mills, 7 blast furnaces, and numerous foundries, forges, and machine shops, which present a striking view from the

river by night. Next to the iron and steel industries come the glass factories, the first of which was built and operated in 1821, making window glass a specialty. In 1829 a cut-glass, and in 1835 a flint-glass factory was set up, and the product of half a dozen plants in 1891 is shipped to Europe (largely to Germany), as well as throughout the United States. Numerous factories are also maintained by Wheeling capital in the neighborhood and across the river in Ohio. Three potteries have a capital of \$700,000 and employ 900 persons when in full operation, the progress in pottery having been remarkable during the past fifty years. Steel, gas, and steam pipe, tacks, sheet steel, tin roofing, metal coiling, leather and harness, paper and cigar boxes of all kinds, are also manufactured. There are a hinge company, employing 150 men; a lantern company, employing 250; a brewery, turning out 40,000 barrels yearly; an axle company, with output of from 20,000 to 30,000 sets of axles yearly; brick works; and woolen mills; and another important manufacturing interest is that of cigars and tobacco, 2,267,270 pounds of smoking and nearly 6,000 pounds of plug tobacco having been manufactured in 1889, as well as millions of cigars, mostly "stogies." Natural gas is supplied by 2 companies. Canning and preserving of fruits have assumed large proportions of late years, one establishment, dating from 1875, employing 100 persons. The city has a large wholesale and jobbing trade, and large quantities of wool are shipped yearly. Ginseng is exported almost exclusively to China. Wheeling has 11 public-school buildings, valued at \$258,828; the enrollment is nearly 5,000, and 112 teachers are employed. The streets are well paved and broad. Eleven banks (1 national) have an aggregate capital of \$1,210,000. Four daily and 7 weekly newspapers are published, 1 semi-weekly, and 2 monthlies. There are more than 5 miles of horse, 8 of steam motor, and 5 of electric street railway. The City Hall and Post-office are fine buildings, and the Young Men's Christian Association have a building of their own. There is a home for aged women at Mount Bellevue. Wheeling Park is reached by the Wheeling and Elm Grove Railway. The ordinary expenditures of the city yearly are placed at \$332,367, or \$9.49 per capita.

COLOMBIA, a republic in South America. It was formerly a confederation consisting of the nine States of Antioquia, Bolivar, Boyacá, Cauca, Cundinamarca, Magdalena, Panama, Santander, and Tolima. The Constitution of Aug. 4, 1886, reduced the States to departments, administered by governors appointed by the President of the republic, whose term of office was lengthened from two to six years. Each department elects a member of the House of Representatives for each 50,000 inhabitants, and sends 3 members to the Senate. The President nominates 6 more Senators. Every citizen who can read and write or has an income of 500 pesos is entitled to a vote. Each department has its legislature, which has authority to legislate on financial matters. The President is Dr. Rafael Nuñez, who was inaugurated on June 4, 1887. The Vice-President is Carlos Helguin. The Cabinet is made up as follows: Minister of Foreign Affairs, Antonio Roldan; Minister of Finance, José Manuel

Goenaga; of Education, José L. Trujillo; of War, Olegario Rivera; of the Interior, Marcelino Velez; of Justice, Luis A. Meza; of the Treasury, Primitivo Crespo; of Public Works, Marcelino Arango.

Area and Population.—The area of Colombia is estimated at 504,773 square miles. The population is estimated at 3,878,600. Bogotá, the capital, has about 100,000 inhabitants.

Finance.—The revenue for the biennial period 1891-'92 is estimated at 20,351,100 pesos, and the expenditure at 23,911,515 pesos. There is a funded internal debt of 5,037,310 pesos and a floating debt of 24,568,241 pesos, besides a debt of 7,500,000 pesos due to the last war, and 11,932,780 pesos of paper currency. The foreign debt, raised in England, was £2,878,203 in 1890, including the defaulted interest for ten years.

Commerce and Production.—Coffee has superseded cinchona bark as the principal article of export. The latter still exists in vast quantities and of the best quality, and the cessation of the trade is owing to the cost of transportation, which is so great that it can not compete with the cultivated product of the East Indies. Cacao is also raised and exported in large quantities. Cotton and bananas flourish, but the exports are small; and sugar, vegetables, and cereals, though the soil is adapted for them, are imported for the use of the people. Tobacco of excellent quality is exported to Germany. Cattle raising is a common pursuit. The hides and horns are usually sent to the United States. Coal and iron exist in many parts of Colombia, but are not mined except in one or two places. Gold and silver are important products, and could be extracted in much greater quantities but for lack of capital and means of transportation. The largest mines now worked are in Antioquia and Tolima, and are owned by Englishmen. Of late American enterprise and capital are entering the field. The value of the imports in 1889 was \$11,777,624. The chief imports are articles of food and textile fabrics. The exports amounted to \$16,199,718 in value, consisting of coffee, Peruvian bark, pea-nuts, corn, silver ore, cacao, dye stuffs, live animals, hides, and tobacco. In 1890 the chief imports from the United States were wheat flour of the value of \$248,086, machinery of the value of \$147,097, refined sugar of the value of \$141,929, and for less amounts manufactures of iron, coal, sewing-machines, lard, petroleum, and many other articles. The exports to the United States were coffee of the value of \$2,170,963, hides of the value of \$927,866, nuts and fruits of the value of \$329,388, cacao of the value of \$128,024, India-rubber of the value of \$294,606, and small quantities of dyewoods, cinchona, raw sugar, and other merchandise. The share of Great Britain in the imports for 1889 was \$4,547,628; that of France, \$2,411,585; that of Germany, \$1,321,390; that of the United States, \$1,230,476. Of the exports, \$4,547,628 went to Great Britain, \$3,950,531 to the United States, \$1,781,619 to France, and \$1,410,683 to Germany. The total coffee exports amounted to \$3,516,293; gold bars and dust, \$2,460,718; other minerals, \$4,464,750; hides, \$1,188,911; tobacco, \$798,029.

Navigation.—In 1889 the number of vessels entered inward was 894, of 798,762 tons, of

which 583, of 768,908 tons, were steamers. Of the steamers, 351 were British, there being 15 English steamers, 9 American, 4 German, 2 French, and 1 Spanish making regular monthly calls at the ports of Colombia.

Communications.—With the exception of the rivers, which are navigable for certain distances by boats of light draught, and 9 short lines of railroad having a total length of 218 miles, the only mode of transportation is by mule trains. The Panama Railroad in 1889 transported 192,845 tons of merchandise, a falling off of 2,564 tons as compared with the previous year, owing to a decrease in the New York trade. There are 5,250 miles of telegraph in operation. The post-office in 1888 carried 1,063,504 letters and post cards.

The Panama Canal.—The canal projected by Ferdinand de Lesseps had absorbed up to the middle of 1886 the sum of 772,545,412 francs, and it was then estimated that it would take at least as much more to complete the work. A loan of 600,000,000 francs was offered in December, 1888, for subscription, but failed. After a vain effort to reorganize under a new charter, the company went into liquidation, and on March 15, 1889, all payments were suspended and work on the canal was stopped. The Civil Tribunal of the Seine appointed provisional administrators. A committee of the French Chamber of Deputies was directed to examine into the affairs of the company, with a view to the completion of the canal with the aid of the credit of the French Government if such a plan was feasible. In December, 1890, an arrangement was effected with the Colombian Government by parties interested in the canal, in accordance with which the time allowed for its completion was extended for a further period of ten years, on the understanding that a new company should be formed to take over the entire assets of the old one, and that the work of construction should be actively resumed before Feb. 28, 1893. For this concession the promoters agreed to pay 10,000,000 francs in gold and 5,000,000 francs in shares of the new company, besides providing for a guard of 250 soldiers to protect the canal during construction. The committee of the French Chamber recommended the completion of the canal by an international arrangement, by which other governments besides the French should share in the guarantee and other nations be invited to contribute the additional capital. It advised the Ministry of Justice to investigate the affairs of the defunct company, to find if the contractors had obtained exorbitant prices by fraud, or been paid for work that was not done.

Boundary Questions.—Differences regarding the boundary lines dividing Colombia and the neighboring republics of Costa Rica and Venezuela were referred to the Spanish Government for arbitration. On the Venezuelan frontier Colombia established her claim to Goajira, San Francisco, and Arauca. On the Costa Rican border she laid claim to the lands between Chiriqui and the river Sicsola, and even asserted an historical title to the territory extending on the Atlantic side to the frontier of Honduras, and on the Pacific side to Lake Nicaragua, embracing the whole of Costa Rica and the greater part of Nicaragua.

COLORADO, a Western State, admitted to the Union Aug. 1, 1876; area, 103,925 square miles. The population, according to the decennial census, was 194,327 in 1880, and 412,198 in 1890. Capital, Denver.

Government.—The following were the State officers during the year: Governor, John L. Routt, Republican; Lieutenant-Governor, William Story; Secretary of State, Edwin J. Eaton; Treasurer, James N. Carlile; Auditor, John M. Henderson; Attorney-General, Joseph H. Maupin; Superintendent of Public Instruction, Nathan B. Coy; Railroad Commissioner, William A. Hamill; Chief Justice of the Supreme Court, Joseph C. Helm; Associate Justices, Charles D. Hoyt and Victor A. Elliot; Court of Appeals (established this year by act of the Legislature), Presiding Judge, George Q. Richmond; Judges, Gilbert B. Reed and Julius B. Bissell. Messrs. Carlile, Maupin, and Coy are Democrats; the other officials are Republicans.

Finances.—The State debt on Nov. 30, 1890, was as follows: Outstanding warrants, bearing 6 per cent. interest, \$1,393,354.47; outstanding certificates of indebtedness, bearing 6 per cent. interest, \$86,890.49; outstanding loco-weed certificates, no interest, \$16,910.24; Capitol-building bonds, bearing 3½ per cent. interest and held by the Public-School Investment fund, \$150,000; total, \$1,647,155.20. To offset this amount there was \$232,938.57 to the credit of the general revenue fund on Nov. 30, 1890, leaving as the principal of the outstanding indebtedness \$1,414,216.63. Of the \$1,393,354.47 outstanding warrants, the State holds \$948,034.67 in the several investment funds. These warrants have been gradually accumulating since the admission of the State to the Union. Successive Legislatures have violated the State Constitution by making appropriations in excess of the revenue available to pay them, and the Auditor has issued his warrant against all appropriations. A decision of the State Supreme Court in 1889 put an end to this practice by declaring all appropriations in excess of the revenue available to pay them to be void. As this decision cast doubt upon the validity of the outstanding warrants so far as they were drawn to pay appropriations made in excess of revenue, the Legislature this year undertook to revive such warrants by providing that they should be paid out of any unappropriated money at any time in the State treasury. But as such payment can be made out of the revenue of any year only after the appropriations and fixed charges for that year are paid, it is likely to be many years before they are entirely redeemed. Various special funds in the State treasury contain large sums of money, but these are unavailable to pay these warrants. The State is therefore paying 6 per cent. interest on them, while she has about \$800,000 locked up in the treasury in special funds which can not be used.

The Constitution limits the State tax to 4 mills on the dollar, which is the rate annually levied. Of this, about 2½ mills is levied for the general revenue fund, the remainder for special objects.

Valuations.—The total assessed valuation of property in the State for 1890 was \$220,544,064.62, an increase over the figures for 1889 of \$27,-

289,937.24. Included in the assessment are 11,046,519 acres of land, valued at \$38,605,565.70; improvements on lands, valued at \$7,209,282.48; town and city lots, valued at \$73,209,222; mining property, valued at \$5,727,657; railroads and railroad property, valued at \$31,411,921.22; 189,724 horses, valued at \$5,550,410; 9,419 mules, valued at \$409,000; 769,823 cattle, valued at \$7,053,370.70; 657,546 sheep, valued at \$758,584; 20,239 swine, valued at \$73,859.

Legislative Session.—The eighth General Assembly met at Denver on Jan. 7, and adjourned on April 7. In its early days the session was marred by disorderly struggles for supremacy between rival factions in the Lower House. The Speaker of that body, elected on the opening day, was James W. Hanna, who in the Republican caucus had been unanimously selected for that honor after a single ballot. He had no sooner been elected, however, than charges were made that bribery had been practiced in his interest, that he intended to make up the House committees unfairly, and that he was not fit for the place. A faction of 14 Republicans, aided by the Democratic members, thereupon undertook to deprive him of the right of appointing committees.

The coalition thus formed controlled a majority of the House, but the Speaker and his adherents stoutly resisted their efforts to abridge his prerogatives, and on Jan. 9 he announced a list of committees selected by him. Disorder reigned during this session, in the midst of which the Speaker declared the House adjourned. On Jan. 12 the contest was renewed. During the debate of this day distinct charges of bribery were made so openly that an investigating committee was at once appointed. Finally, on Jan. 14, the Speaker ruled that the House journal of Jan. 9, containing his appointment of committees and the record of adjournment, stood approved, and refused to entertain an appeal or motion reopening the question. A member of the coalition thereupon moved that the office of Speaker be declared vacant, another member put the motion to vote and declared it carried by a vote of 28 to 21, and the coalition then proceeded to elect Jesse White as Speaker. Speaker Hanna and his supporters refused to surrender the chair, and the anomaly was presented of two rival Houses attempting to do business in the same hall. Thereafter each House held daily sessions, and when the day arrived for choosing a United States Senator, each House went through the form of voting. The law requires that the Senate and the House, after voting separately, shall meet on the next day in joint session to announce the result of the ballot taken on the day preceding, and if no choice has been made by both branches, to continue balloting in one body. The question at once arose as to which of the two rival Houses should be recognized as legally constituted and should meet with the Senate in joint session. By agreement of the factions a member of the House, other than the two rival Speakers, was selected to preside over the joint session, in conjunction with the President of the Senate; and when the question arose respecting the vote of the House on the preceding day, it was ruled after some discussion that no choice had been made by that body. The joint session then pro-

ceeded to ballot for United States Senator, with the following result: Henry M. Teller, Republican, 47; Caldwell Yeaman, Democrat, 27; and the former was declared elected. On Jan. 24 Gov. Routt sought to secure a settlement of the dispute between the rival Houses by addressing a letter to the judges of the Supreme Court, which recited the circumstances of the attempted deposition of Speaker Hanna, and asked their opinion as to who was the legally elected Speaker of the House. Arguments were heard by the court, and on Jan. 28 a decision was rendered to the effect that "as a purely legal proposition, the House of Representatives has the power, by a vote of a majority of the whole number of members elected, to remove its Speaker from office in the manner stated in the executive communication submitted." The court did not expressly say who was the legal Speaker, but the opinion appeared so conclusive of the rights of the parties, that Speaker Hanna and his friends withdrew their claims, and Jesse White was recognized as Speaker for the remainder of the session. On Feb. 4 the Bribery Investigating Committee, appointed on Jan. 12, made its report, stating that the testimony received tended to show that four or five members of the House had been approached and offered bribes to support Speaker Hanna, and recommending that the grand jury of Arapahoe County inquire into the matter. The evidence all came from the enemies of Hanna, and, although some indictments were found by the grand jury, no strong proof to support them could be procured, and the cases were never tried.

An Australian or secret-ballot law was passed at this session. It provides that all ballots cast in elections for public officers shall be printed and distributed at county expense, except that ballots to be used in municipal elections shall be printed and distributed at the expense of the city or town. Candidates may be nominated by the convention or caucus of a political party which at the last preceding election polled at least 10 per cent. of the entire vote cast in the State, county, or other divisions for which the nomination is made, or by nomination papers signed by voters residing within the district for which the nomination is made to the number of 500 when the nomination is for the whole State, to the number of 100 when the office is to be filled by the voters of a district less than the State and greater than a county or by the voters of a county or city, and to the number of 50 in other cases. In municipal elections the city or town clerk, and in other cases the county clerk, shall prepare the ballots and cause them to be distributed. The names of all candidates duly nominated shall be printed on each ballot, those of each political party being arranged in a column under the name and device of the party to which they belong, and just above each name shall be the designation of the office for which the candidate named is nominated. On the back shall be printed the words "Official ballot for," together with the name of the election precinct or division, the date of the election, and a *fac-simile* of the signature of the clerk preparing the ballots. Each county, city, or town clerk shall use precisely the same quality and tint of paper and kind of type and quality and tint of plain black

ink for all ballots furnished by him at any one election. There shall be but one ballot-box at each polling place. The ballots shall be of such form, and the indorsement thereon so printed, that they may be folded in the middle lengthwise and then crosswise, so that when folded the indorsement shall be visible, and not the contents of the ballot. At each polling place at least one voting booth or compartment for every 50 voters who voted in the district at the last election shall be furnished, and a guard rail shall be so constructed that no person outside thereof can approach within six feet of the booths and ballot-box, both of which shall be in plain view of persons outside the rail. The voter shall indicate his choice by marking a cross opposite the name of the candidate to be voted for, or he may vote for all the candidates of any party by marking a cross above such list and near the device or emblem of the party, which shall be printed on the ballot above the party name. He shall fold his ballot so as to conceal his choice, and so that the official indorsement shall appear. To each ballot shall be attached two stubs containing only the number of the ballot, one of which shall be retained by the election clerk who gives out the ballots to the voters and who shall write his initials on the other stub, and such other stub shall be retained by the officer who receives the ballots. Both officers shall keep a record of the name of the voter and the number of his ballot. The officer receiving the ballots shall write on one corner the number of the ballot in the order it is received by him (of which number he shall keep a record), and shall turn back and paste down or seal the corner, so that the number written shall be invisible. Such pasting or sealing shall not be disturbed except in case of a contested election. Electioneering within 100 feet of any polling place is forbidden. The election day in November shall be a legal holiday. Employés shall be allowed two hours for voting without loss of pay. This act shall not apply to elections of school officers that occur at any other time than on the regular election day for State, county, and city officers.

There was also enacted a registration law applying to all cities of the first and second class, and to all other cities having over 15,000 inhabitants. An act to punish crimes against the elective franchise establishes severe penalties for bribery of voters in any form, forbids betting by candidates upon the result of any election, makes intimidation or coercion of voters unlawful, especially when practiced by employers upon their workmen, and requires candidates and party committees to file with the Secretary of State or county, city, or town clerk itemized sworn statements of election expenses.

To forward the construction of the Capitol building, \$150,000 was transferred from the Internal Improvement fund to the Capitol Building fund, provision being made for repaying the former fund with interest. An act was also passed submitting to the people at the election in November, 1891, the question whether additional State bonds to the amount of \$300,000, should be issued and sold to raise more money for this building. The act of 1889 creating a Supreme Court commission was repealed, while by another act a court of appeals was created

having similar powers. The system by which county officers were entitled, in lieu of a fixed salary, to all official fees received by them was changed so as to require such officers to turn over to the State all fees collected in excess of certain fixed sums which should form their salaries, and at the same time the fees chargeable by such officers were reduced by from one fifth to one half of the former figures. The State Treasurer was required to give a bond compelling him to turn over to the State all interest received on public funds in his hands, and preventing him from deriving any personal gain or benefit from such funds.

The State was redistricted for members of the Legislature in such a manner as to increase the number of Senators to 35, and of Representatives to 65. The First Congressional District was formed out of the counties of Larimer, Boulder, Weld, Morgan, Logan, Washington, Sedgwick, Phillips, Yuma, Arapahoe, Jefferson, Park, and Lake, and the Second District out of the remainder of the State. There was appropriated the sum of \$100,000, to be used in securing a suitable exhibit from the State at the World's Fair. To raise money for paying claims arising out of the so-called Ute war the levy of a special tax of one half-mill was authorized. An amendment to the revenue law provides that taxes shall be payable semi-annually.

Other acts of the session were as follow :

To encourage and promote the organization of agricultural and mechanical fair associations.

Accepting the act of Congress that appropriates a portion of the proceeds of the public lands to the endowment and support of agricultural and mechanical colleges.

Repealing the acts of 1887 and 1889 which prevent non-resident aliens from acquiring real estate in the State.

Prohibiting the appointment of non-residents as special officers for the purpose of preserving the public peace.

Appropriating \$21,250 for the assistance of agriculture and the relief of settlers in the counties of Sedgwick, Logan, Phillips, Yuma, Washington, Kit Carson, Arapahoe, and Cheyenne.

Providing a new law to protect and punish wrongs to children.

Abolishing the office of State Dairy Commissioner.

Providing for the dissolution of corporations.

To provide for the incorporation and regulation of trust companies.

To prevent the expenses of any county from exceeding its revenues.

Raising the age of consent in females to sixteen years.

Defining larceny of live stock, and providing penalties therefor.

Prohibiting the sale, giving, or furnishing of tobacco, or any article made in whole or in part of tobacco, to any child under sixteen years, without the written order of the father or guardian of such child.

To prohibit the sale or giving to any Indian of fire-arms, ammunition, or other munitions which can be used in fire-arms.

Amending the game laws.

Providing that the expenses of the family and the education of the children shall be chargeable upon the property of both husband and wife, or either of them, and that they may be sued jointly or separately.

Amending the jury law.

To prohibit the sale of liquors near public works and grading camps of railroads.

Forbidding railroad companies from requiring any conductor, telegraph operator, or other trainman who

has worked eighteen consecutive hours, to go on duty till he has had at least eight hours' rest.

Requiring all saloons to be closed from midnight to six o'clock in the morning, and throughout every Sunday, and forbidding saloon keepers from keeping any wine room or other place in connection with their saloon where women may enter and be supplied with liquor.

To authorize school directors to purchase United States flags and display them on school buildings.

Education.—The following public-school statistics cover the school years ending June 30, 1889, and June 30, 1890:

ITEMS.	1889.	1890.
Number of school-houses.....	995	1,190
Value of school property.....	\$3,584,373	\$4,187,869 40
Number of school districts.....	1,182	1,284
Children of school age.....	85,924	95,187
Enrolled in public schools.....	59,118	65,400
Average daily attendance.....	85,054	88,714
Number of male teachers.....	587	622
Number of female teachers.....	1,567	1,758
Receipts from all sources.....	\$2,087,251 98	\$2,596,945 47
Expended for teachers' wages..	\$718,971 78	\$818,604 65
Total expenditures.....	\$1,586,519 44	\$1,944,807 88

Under the present State law local school directors are permitted to own the text books used in the schools and to furnish them free to pupils in attendance. At the close of the school year 1890 201 districts had availed themselves of this privilege, and the system has proved generally advantageous.

At the State University at Boulder there were 151 students during the school year 1889-'90, and 167 on Jan. 1, 1891. The attendance at the Agricultural College in 1890 was 109, a decrease of 10 from the previous year. The Normal School at Greeley was opened on Oct. 6, 1890, and soon had an attendance of 76 normal students and 255 students in the model school. The buildings for this institution have been erected by the city of Greeley and the county of Weld.

Charities.—For the two years ending Nov. 30, 1890, the report of the State Insane Asylum at Pueblo is as follows: Patients on Nov. 30, 1888, 171; admitted during the two years, 278; discharged, 175; remaining on Nov. 30, 1890, 274. The property of the institution consists of two hospital buildings, with out-buildings and 80 acres of land, the whole valued at about \$400,000. At the Mute, Deaf, and Blind Institute there were 111 pupils in November, 1890.

The Industrial School at Golden on Nov. 30, 1888, had 164 inmates. Received during the two years, 205; discharged, 221; remaining on Nov. 30, 1890, 148.

Coal.—The total amount of coal mined in the State in 1889 was 2,400,629 tons; in 1890 it was 3,075,781 tons. The coke produced in 1889 was 184,819 tons; in 1890 it was 228,487 tons. The value of the product for 1890 was \$4,657,220.26. The average number of persons employed in the coal mines is reported to be 6,172, the average price per ton that is paid to the miners is 73-4 cents, and the average wages received by miners \$2.60 a day.

Agriculture and Cattle Raising.—The total area of actual agricultural lands in the State is 4,706,744-06 acres, while the grazing lands proper cover 7,095,764-76 acres. There are 9,950

acres of fruit lands under cultivation. Mesa County furnishes 1,500 acres of this number, and Frémont 1,000. The live stock of Colorado is valued at \$30,500,000. Of this amount the cattle valuation is placed at \$16,046,133; sheep, \$4,306,555. The wool product for 1890 is valued at \$12,000,000.

Irrigation.—Official reports to the National Bureau of Agriculture show that there are about 6,316 miles of irrigating canals in the State, the total area that is at present irrigated being 4,004,409 acres. The estimated cost of these canals is \$10,950,000.

Trans-Mississippi Commercial Congress.
—Under this name a convention of about 500 delegates, representing the States and Territories west of Mississippi river, met at Denver on May 19 to discuss the needs and interests of that section. The sessions continued through four days, in the course of which the silver and irrigation problems were discussed at length. Resolutions were adopted urging the establishment of steamship lines between the Gulf ports and Latin-American states and the speedy completion of the Nicaragua Canal; demanding legislation by Congress to prevent mines and mineral lands from becoming the property of railroad corporations under their land grants; urging that the geological survey be devoted to the purposes for which it was established; favoring the improvement of Mississippi river, a deep-water harbor at Galveston, and the immediate construction of the Hennepin Canal; declaring that naturalization laws should be more stringent, and that United States courts only should have power to naturalize; favoring the admission of all the Territories; recommending the repeal of the law of Congress preventing non-resident aliens from owning mining property and other real estate in the Territories; urging the restriction of immigration; and favoring the passage of the Torrey Bankrupt bill by Congress. Respecting the subject of irrigation and the silver question, the following resolutions were adopted:

Resolved, That it is the sense of this Congress that the General Government should, under proper restrictions, cede to the several States and Territories of the arid region the public lands within their borders, except such lands as are more valuable for mining than agricultural purposes; provided, that no State or Territory shall be permitted to sell such lands for less than \$1.25 per acre, nor more than 320 acres to one person, nor to any other than an American citizen who shall at the time of said purchase be an actual citizen of the State or Territory in which said land shall be; and,

Resolved, further, That such State or Territory shall apply the funds arising from the sale of said lands to the reclamation of the same and to school purposes.

Resolved, That the Congress of the United States be hereby petitioned to repeal all laws which in their effect work dishonor upon or, in the least, challenge the sovereignty of the silver dollar as an absolute measure of values, and to restore to silver the place given it as perfect money by the framers of our Government.

Resolved, That the only modification of the above which we will accept is the limiting of the operation of the law to the silver product of the United States, and this we will accept, believing it will be but a change of method which will reach at once the same desired result.

Resolved, That we petition the President and Congress of the United States to once more attempt to bring around an international recognition and adjustment of silver as money, and, should this effort fail, that a limited agreement be sought with the nations of the Latin Union, whereby the mints of those nations may again be opened for the coinage of silver.

The Congress adjourned, to meet at Omaha in October.

Political.—A successor to Chief-Justice Helm was the only State officer to be elected this year. On Sept. 9 a convention of the People's party met at Denver, and nominated J. H. Croxton for this office. The following is a part of the platform adopted:

We are opposed to the constitutional amendments proposed by the Eighth General Assembly providing for an increase of the taxing power and the voting of \$300,000 bonded indebtedness.

This convention is in favor of a strong employers' liability and mechanics' lien act.

On Sept. 29 the Democratic State Convention met at Denver, and nominated Luther M. Goddard. The platform includes the following:

We favor the free and unlimited coinage of silver, and repeat our condemnation of the act of the Republican party which struck down the currency of the people in the interest of and at the dictation of the moneyed aristocracy of this country.

We favor the early completion of the State Capitol building and the proposition to issue bonds to the amount of \$300,000, to the end that the work may not be interrupted.

On the same day the Republican Convention met at Glenwood Springs, and renominated Chief-Justice Helm. The platform approves the administration of President Harrison, while not agreeing with him on the silver question; approves the action of the last Legislature in enacting the Australian ballot law and the salary and fee bill; urges the speedy ratification of the treaty for the removal of the Utes from the State; reaffirms the doctrine of protection and reciprocity; and contains the following paragraphs:

This convention earnestly recommends to the people of the State the voting of the bonds necessary to complete the State Capitol building.

We favor protection against every form of convict or servile labor; prohibition of the employment of young children in factories and mines; protection of railroad employes; protection of employes engaged in factories and mines or other hazardous occupations from every danger that can be removed or diminished; the adjustment of differences between employes and employer by arbitration; and such legislation as may be needed to facilitate and protect organizations of farmers and wage workers for the proper and lawful promotion of their mutual interests.

The monetary condition of the world during the last seventeen years has demonstrated that the demonetization of silver by the United States was, if not a crime, a stupendous blunder, and bimetalism is necessary to the welfare and prosperity of all commercial people. We, therefore, in the interests of the working and producing classes of all countries, demand the full recognition of silver as a money metal by the opening of the mints of the United States to the full and unlimited coinage of silver.

At the election in November the Republican candidate was successful.

COLUMBUS'S FIRST LANDFALL. The exact place where Columbus first landed on the western continent has long been a matter of conjecture. All that is known on the subject is taken from Las Casas's abridgment of Colum-

til Friday [Oct. 12], when they reached a small island of the Lucayos called *Guanahani* by the natives." This island he called San Salvador, and he described it as "very large and very level, and has very green trees and abundance of water



bus's journal or log-book. Under date of Oct. 11 it says: "Two hours after midnight the land appeared, about two leagues off. They lowered all the sails, leaving only a storm square sail, which is the mainsail without bonnets, and lay to un-

and a very large lagoon in the middle, without any mountain, and all is covered with verdure most pleasing to the eye." Subsequently he refers to a "reef of rocks which entirely surrounds that island, although there is within it depth

enough and ample harbor for all the vessels of christendom, but the entrance is very narrow." It is conceded that Columbus first saw one of the Bahama Islands, that he anchored consecutively at four others, and that from the last one he went to Cuba. Of the Bahama group, according to the present enumeration, it was possible for him to have landed on one of 36 islands, 687 cays, and 2,414 rocks; but the choice of his first landfall has been restricted chiefly to the following islands: San Salvador or Cat, Watling, Grand Turk, Mariguana, and Samana or Attwood Cay. A discussion of the claims of each of these is given in Vol. II of Winsor's "Narrative and Critical History of America," and perhaps more fully in Appendix No. 18 of the "Report of the United States Coast and Geodetic Survey" for 1880, where Capt. Gustavus V. Fox makes "An Attempt to solve the Problem of the First Landing-Place of Columbus in the New World." The results of his researches were to the effect that Samana or Attwood Cay was the exact locality. Such was the condition of affairs when in June, 1891, the Chicago "Herald" sent Walter Wellman and Charles Lederer to the Bahamas to fix the spot with exactness. They landed first at Nassau, and there were received by the Governor of the Bahamas, who provided them with a letter requesting the authorities "to assist and promote in every way in their power the objects" of the expedition. A steamer was chartered, and they proceeded first to Cat Island, but found there no coast along which Columbus could row in his boats "in a northeasterly direction to see the other side, which was on the other side of the east" (Columbus's log-book), for there is no north-north-east coast in the island. The eastern coast is north-northwest and south-southeast, and if he had landed there and taken his boats "to see the other side," he must have steered either north-west or southeast. If he had steered north-northeast, or even due north, he would have gone right out into the ocean. If, perchance, he had landed on the southern shore, where Port Howe is, he would have been compelled to row south-east or southwest "to see the other side." Again, if he had anchored on the southern side of the island the natives would not have told him to "round the island to the southward" to go to the southwest in search of gold, as Columbus says they did. Cat Island has no large lagoon in its middle; it has no "reef running all round it"; it has no such harbor as that which Columbus says he saw; it has no piece of land like an island and yet not like an island, but which could easily be made an island; it is not very level, and neither in its physical features nor in its position relative to other islands that Columbus visited does it meet the requirements of the first voyage. It was decided that Cat Island was not the first landing-place, and the steamer was turned eastward toward Watling Island. This they found to conform to the historical evidences, and geometrically to be unerringly the first landfall. The conditions required by any theory of the first voyage are those indicated by Columbus himself. These are that the island first touched, which he named San Salvador, must have such features as

a north and south coast, surrounding reefs, a large lagoon in its middle, a headland nearly cut from the mainland by the action of the sea, and a spacious harbor near by with a narrow entrance. The second island, which he called Santa Maria, must have coasts approximating north and south and east and west, and must be south or southwest from San Salvador about 25 miles. The



third island, called Fernandina by Columbus, must be visible from the second; it must have a long coast running south-southeast and north-northwest; it must have, somewhere along its shores, a bit of coast running east and west, and near by must be a harbor with several narrow entrances. The fourth island, named Isabella by Columbus, must not be visible from the third, but must be almost due east from the south cape of Fernandina; it must have a rocky islet at its northern extremity, with a lagoon near by; to the south of it must lie another island, separated from Isabella by but a narrow channel (so narrow that, without close examination, it might be mistaken for an inlet); and this adjacent island must be surrounded at its southern extremity by shoals that extend south and east. Moreover, all these islands must be so located that in sailing southwest from the northern point of the fourth island a navigator would be able to calculate with approximate correctness his distance and direction from the southern cape of the third island; they must so lie that a ship sailing certain prescribed distances west and southwest would come upon a chain of seven or eight islands lying north and south (designated as Islas de Arena by Columbus), with shoal water five or six leagues to the south of them. Finally, the Islas de Arena must lie where a voyage of 58 miles south from them would bring a navigator in sight of Cuba, not far from the mouth of a wide river which affords a good harbor. That Cat Island was an impossible San Salvador has already been

shown. Grand Turk Island is almost unworthy of consideration, and Lieut. J. B. Murdock, U. S. N., in a paper published in the "Proceedings of the United States Naval Institute" for April, 1884, entitled "The Cruise of Columbus in the Bahamas, 1492," says of this island, originally proposed by Navarrete: "It is hardly possible to imagine that his track is derived from the log at all." Concerning Mariguana and Samana, neither answers to the description given by Columbus. Neither has the north-and-south coast nor the lagoon. So far as the charts show, neither has the remarkable headland with a harbor with a narrow entrance beside it. Watling Island alone seems to comply with the conditions. According to the Chicago "Herald" expedition, "Watling Island is the Guanahani of the natives, the San Salvador of Columbus, the scene

miles north; seventh, out to sea, and then turning back to a cape or point of the coast farther north; eighth, to Rum Cay; and ninth, to Watling Island." The exact spot on Watling Island where Columbus first landed can not be positively determined, but it is safe to assume that he first anchored off the eastern shore. He was sailing westward at two o'clock in the morning of Oct. 12, and the two hills—one two and the other three miles south of Cut Point—would actually have been the first bits of land to show above the horizon in the moonlight. The location of the reefs, of the harbor with the narrow entrance, of the piece of land like an island, Columbus's use of the words "round the island to the south" in order to go to the southwest, the voyage in the boats outside the reefs along the shore to the north-northeast—all indicate that he



MONUMENT ERECTED ON WATLING'S ISLAND IN 1891.

of the most momentous event in history, because it is the only island which in itself agrees with the discoverer's description, and because it is the only island from which the log can be followed to the five other islands visited by him. If we were to take the log, with the directions and distances sailed, descriptions of coasts, islands, and harbors, and trace the track backward from Port Gibura, Cuba, or any of the adjacent anchorages, with no thought of Watling or any of the other proposed landfall islands, a track so traced would run first to Ragged Islands; second, to the rocky islet or Bird Rock; third, to Fortune Island and the shoals; fourth, to the rocky islet again; fifth, to Cape Verd; sixth, to Clarence Harbor and the east-and-west coast two

was on the eastern or northeastern side of the island. Here, accordingly, was raised a monument by the expedition to commemorate the first landing of Columbus. The monument, as shown in the engraving, is a rectangular structure, flanked at the corners by eight buttresses, faced with an appropriate tablet of marble with the inscription: "On this spot Christopher Columbus first set foot upon the soil of the New World. Erected by the Chicago 'Herald,' June 15, 1891." In front was a grotto in which was placed a marble globe, on whose surface was traced the outlines of the New World, and the site of Chicago marked by a silver star. A rough shaft, capped with a block of granite, surmounted the structure. The shaft contained pieces of

stone from various buildings in Chicago and a large bundle of newspapers, containing copies of the principal journals of the United States. The monument is about 20 feet in height. The dedicatory ceremonies included a prayer by S. W. Roberts, a brief address by Capt. Maxwell-Nairn, the local magistrate, and an oration by Walter Wellman.

COMMERCE AND NAVIGATION OF THE UNITED STATES. The total value of the trade of the United States with other countries for the twelve months ending June 30, 1891, was \$1,729,397,006, exceeding by \$82,257,913 that of 1890, which was greater than the commerce of any previous year, and \$241,797,860 in excess of the total for 1889. The value of the merchandise imports was \$844,916,196, the largest in the history of American commerce, exceeding the total for the fiscal year 1890 by \$55,605,787. The exports of merchandise reached the sum of \$884,480,810, exceeding those of 1890 by \$26,652,126. The values of the total imports of merchandise and of the exports, domestic and foreign, for the last four years have been as follows:

YEARS.	Imports.	Domestic exports.	Foreign exports.	Total exports.
1888...	\$723,957,114	\$683,862,104	\$12,092,403	\$695,954,507
1889...	745,181,652	730,282,609	12,118,766	742,401,375
1890...	759,310,409	845,293,828	12,534,856	867,828,684
1891...	844,916,196	872,270,283	12,210,327	884,480,610

In 1888 there was an excess of imports over exports amounting to \$28,002,607. In 1889 the imports increased, but the exports recovered so as to nearly balance them, the whole merchandise movement of the year showing a balance of \$2,730,277 against the United States. In 1890 the expansion of the export trade was extraordinary, and while the consumption of foreign products went on at a more rapid rate, the balance of trade in favor of the United States reached the large amount of \$68,518,275. In 1891 we see the same steady growth in the productive capacity of the country as measured by the increase in the exportable surplus, and as a result of this continued prosperity a more rapid expansion of the import movement, which nevertheless left a balance in favor of the United States of \$39,564,614. The value of merchandise imported free of duty was \$366,241,352 in 1891, an increase of \$100,572,723. The value of dutiable merchandise was \$478,674,844, a decrease of \$44,966,936. The difference in the proportion of free and dutiable imports was caused mainly by the transfer of sugar and of certain textile materials from the dutiable to the free list.

The value of the imports and exports carried in cars and other land vehicles in 1891 was \$72,856,194, as compared with \$73,571,263 in 1890, \$66,664,378 in 1889, \$54,356,827 in 1888, \$48,951,725 in 1887, and \$43,700,350 in 1886. Of the total imports, goods of the value of \$40,932,755 were brought in cars and other land vehicles, an increase of \$311,394; the value brought in American sailing vessels was \$74,211,783, which was \$3,959,778 more than in 1890; the value carried in American sailing vessels was \$53,259,895, or \$1,437,048 less than in the previous year; the value brought in foreign steam vessels was

\$620,659,640, an increase of \$49,210,646; and the value brought in foreign sailing vessels was \$55,855,123, an increase of \$3,561,017. Of the total exports, the merchandise carried in cars and other land vehicles was \$30,116,869 in value, or \$201,077 less than in 1890; the value carried in American steamers was \$42,967,198, or \$6,058,419 more; the value carried in American sailing vessels was \$33,938,428, a decrease of \$4,534,251; the value carried in foreign steamers was \$675,537,455, an increase of \$30,959,672; and the value carried in foreign sailing vessels was \$89,710,333, a decrease of \$5,306,308. The foreign exports carried in cars declined from \$2,631,956 to \$1,806,570, those carried in American sailing vessels from \$947,721 to \$651,080, and those carried in foreign sailing vessels from \$898,749 to \$394,167; while the value carried in American steam vessels advanced from \$1,172,959 to \$1,411,341, and that carried in foreign steam vessels from \$6,883,471 to \$7,947,369.

Imports.—The values of the principal articles and classes of articles exempt from duty imported into the United States during the twelve months ending June 30, 1891, compared with the figures for the preceding year, are given in the following table:

ARTICLES FREE OF DUTY.	1890.	1891.
Animals for breeding.....	\$3,496,655	\$2,465,110
Articles, produce of U. S., returned.....	4,231,952	4,466,279
Works of American artists.....	400,123	395,858
Asphaltum or bitumen, crude.....	190,555	253,410
Bark, hemlock.....	164,276	274,939
Boiling cloths.....	821,125	296,088
Books, maps, engravings, etc.....	1,115,353	1,655,514
Alizarine.....	25,882	667,862
Argal or crude tartar.....	2,798,588	2,197,507
Cinchona bark.....	282,775	801,070
Cochineal.....	42,485	19,779
Logwood and other dye woods.....	1,725,167	2,010,435
Gums.....	5,697,280	6,906,914
Indigo.....	1,827,937	1,600,639
Licorice root.....	794,530	896,597
Lime, chloride of.....	1,385,080	1,429,509
Mineral waters.....	481,579	362,800
Opium, crude.....	(Dutiable)	* 981,632
Potash, muriate of.....	249,350	923,529
Potash chlorates, nitrates, etc.....	(Dutiable)	* 842,995
Quinia, salts of.....	902,060	883,260
Soda, nitrate of.....	2,709,131	2,923,874
Sulphur.....	2,186,559	2,451,513
Vanilla beans.....	559,867	594,744
All other chemicals, drugs, and dyes.....	4,238,718	5,444,714
Chicory root.....	(Dutiable)	* 35,512
Cocoa or cacao, crude.....	2,312,751	2,817,168
Coffee.....	78,267,432	96,123,777
Cork wood and bark.....	1,213,876	1,249,008
Cotton, unmanufactured.....	1,392,723	2,825,004
Diamonds and precious stones, uncut.....	202,858	804,626
Eggs.....	2,074,912	† 1,053,961
Ferriaceous substances.....	1,108,726	543,760
Fertilizers.....	1,218,989	1,525,384
Fish, fresh.....	880,208	† 250,886
Bananas.....	4,653,779	5,854,752
Cocoa-nuts.....	822,510	913,233
Currents.....	(Dutiable)	* 1,246,074
Dates.....	(Dutiable)	* 613,445
Other fruits and nuts.....	1,391,081	1,789,190
Furs and fur skins.....	2,165,213	2,822,166
Hair.....	2,866,281	2,265,714
Hats and bonnets, materials for.....	(Dutiable)	* 1,549,725
Goat skins.....	9,106,082	11,458,745
Other skins.....	13,775,894	16,497,014
Personal effects of immigrants, etc.....	2,735,099	2,920,050
India-rubber and gutta-percha.....	14,554,512	13,020,804
Needles for hand sewing.....	(Dutiable)	* 253,132
Shot-gun barrels, rough bored.....	(Dutiable)	* 68,218
Ivory.....	848,105	864,302
Vegetable Ivory.....	61,477	76,537
Matting, straw.....	(Dutiable)	* 1,459,093

ARTICLES FREE OF DUTY.	1890.	1891.
Oils, fixed or expressed	923,233	1,081,265
One, volatile or essential	904,991	1,238,07
One, gold-bearing	91,679	214,363
One, silver-bearing	7,748,572	8,968,608
Paper stock	5,261,448	5,018,248
Platinum	707,343	925,066
Plantago	573,561	509,809
Seeds	559,183	880,364
Silk, raw, cocoons, and waste	24,325,531	19,077,366
Spices, unground	2,973,994	2,889,151
Sugar, beet, unrefined	(Dutiable)	\$ 8,870,309
Sugar, cane and other, unrefined	(Dutiable)	\$ 34,508,507
Molasses	(Dutiable)	\$ 1,954,957
Ten	12,817,493	13,828,998
Jute and jute butts	(Dutiable)	\$ 2,644,963
Manila hemp	(Dutiable)	\$ 6,218,254
Sisal grass	(Dutiable)	\$ 4,054,578
Coir yarn	92,421	167,452
Other textile grasses and fibers	987,904	1,697,680
Tin in blocks, bars, pigs, etc.	6,808,909	7,977,745
Wood, unmanufactured	4,242,085	5,276,972
Articles from the Hawaiian Islands ..	12,058,557	10,749,462
All other free articles	7,639,332	9,401,154
Total free of duty	\$265,663,629	\$366,241,352

* From Oct. 6, 1890, only. For the preceding period the value is given in the table of dutiable articles.

† Up to Oct. 6, 1890. For the remaining period see the table of dutiable imports.

‡ From April 1, 1891. For the preceding nine months see the table below.

The importing price or cost in the foreign market whence they were imported of the cattle brought in free of duty has sunk from \$56 in 1884 to \$18 in 1891, while the quality of horses imported for breeding purposes has advanced, and the average cost has risen from \$121 to \$311. The price of asphalt per ton in 1891 was \$3.61, a third higher than in the preceding year; the price of alizarine advanced from 17 to 20 cents a pound, and that of cochineal from 21 to 23 cents, while that of cinchona remained at 10 cents, argal fell from 11 to 10 cents, and logwood was lower in price. Of the gums, camphor has risen in four years from 12 to 27 cents a pound, while gum arabic has declined from 34 to 12 cents. Indigo was 77 cents a pound in 1891, as compared with 65 cents in 1890. Chloride of lime or bleaching powder averaged 1 cent a pound in both years. Licorice root was 2 cents a pound, double the price in 1890. Sulphate of quinia continued to decline, falling from 30 to 25 cents per ounce, a quarter of the price in 1884. The price of soda nitrate remained the same; but that of sulphur advanced 25 per cent. Vanilla beans showed some falling off. Unmanufactured cocoa remained unchanged; but coffee rose from 16 to 19 cents a pound. Eggs were 15 cents, a cent more a dozen. Guano rose from \$13.26 to \$17.50 a ton, while phosphates fell off in price at the port of embarkation from \$10.02 to \$8.68. Salmon was a cent a pound cheaper, partly owing to the imposition of a duty, but other fresh fish averaged the same in price. India-rubber advanced from 44 to 52 cents a pound. Ivory was \$3.64 a pound, about 3 per cent. cheaper. The fixed oils were 6 cents a pound, an advance of 1 cent, while the volatile oils fell from 63 to 55 cents per pound. The price of rags did not vary. Raw silk declined from \$3.92 to \$3.66 a pound, while waste silk and cocoons showed a considerable advance. The price of nutmegs was a cent a pound higher, that of pepper fell from 12 to 10 cents, and other spices averaged 15 per cent. lower prices. The

average price of tea advanced from 15 to 17 cents a pound.

The number of cattle imported free of duty in 1891 was 2,740, a decrease of 1,192; of horses, the number was 6,444, or 4,424 less than in 1890; and the number of sheep was 9,006, a decrease of 6,697. The quantity of American spirits stored abroad and reimported was 1,791,591 gallons, 771,395 gallons more than in the preceding year. The quantity of asphaltum imported was nearly the same. The import of hemlock bark was two thirds greater in quantity. In the imports, that of alizarine and madder increased 60 per cent., that of crude tartar declined 12 per cent., that of the barks from which quinine is extracted was slightly greater, and that of cochineal was only about two fifths as large. In the import of logwood there was an increase from 65,870 to 84,155 tons. The import of gum arabic fell off 10 per cent. in quantity, and that of camphor 15 per cent., while that of gambier or terra japonica increased 85 per cent., and that of shellac 35 per cent. Of indigo about a quarter less was imported, of licorice root about the same quantity, of chloride of lime about 8 per cent. more, of muriate of potash 20 per cent. more, of quinine and alkaloids of the same nature a very little more, of nitrate of soda 10 per cent. more, of sulphur 15 per cent. less, and of vanilla beans 18 per cent. more. The import of cocoa was larger by one sixth, and that of coffee increased from 499,159,120 to 519,528,432 pounds. There was an increase of 25 per cent. in the import of guano and of 13 per cent. in that of phosphates for fertilizing purposes. The imports of rubber and gutta-percha increased from 33,842,374 to 34,672,924 pounds. In rags for paper-making there was an increase in quantity of 20 per cent. The import of raw silk fell off from 5,943,360 to 4,917,688 pounds, that of cocoons from 162,531 to 82,053 pounds, and that of silk waste from 1,404,549 to 1,300,789 pounds. The importation of sugar was enormously stimulated by the removal of the duty. The same is true in a less degree of jute, sisal grass, and other raw materials that were transferred to the free list. The effect of the competition of the Spanish and English colonies and of Europe is not noticeable, except in the prices, in the returns of imports of brown sugar from the Hawaiian Islands, which were more than a third greater than in 1890.

The following table gives the values of the principal articles and classes of dutiable merchandise imported in 1891 and the last preceding year:

DUTIABLE ARTICLES.	1890.	1891.
Animals, live	\$3,270,277	\$2,480,255
Art works	1,796,872	2,014,510
Books, maps, engravings	2,878,717	2,571,889
Brass, and manufactures thereof ..	166,568	284,848
Breadstuffs	6,034,272	4,454,449
Bristles	1,286,219	1,857,988
Brushes	767,128	863,573
Buttons	3,207,128	2,006,411
Cement	2,172,932	4,021,998
Coal-tar colors and dyes	1,787,533	1,673,264
Glycerin	923,935	996,686
Logwood and other dyes	218,105	274,409
Opium, crude	1,183,712	* 220,743
Opium, prepared for smoking	269,546	567,635
Potash, nitrate of, or saltpeter	376,499	* 181,316
Caustic soda	1,470,335	1,874,700
Sul soda and soda ash	3,498,388	4,882,917
Other salts of soda	184,437	159,079
Sumac, ground	245,536	822,375

DUTIABLE ARTICLES.	1890.	1891.
Other chemicals, drugs, and dyes.	4,675,221	5,125,674
Clays or earths.	832,081	487,226
Clocks, and parts of.	489,406	800,492
Watches, and parts of.	1,674,878	1,984,414
Coal, bituminous.	8,097,760	8,588,273
Copper ore.	299,803	526,568
Copper, and manufactures of.	122,221	208,189
Corsets.	968,129	† 262,504
Cotton cloth.	3,508,241	4,407,644
Clothing, cotton.	836,655	1,201,278
Cotton knit goods.	7,149,080	6,736,620
Cotton laces, edgings, embroideries.	11,447,670	10,591,645
Cotton thread and yarn.	904,185	857,645
Other manufactures of cotton.	6,577,824	5,917,792
Earthen, stone, and china ware.	7,030,801	8,881,888
Eggs.	(Free of duty.)	† 131,681
Dolls and toys.	2,070,659	2,279,121
Feathers.	1,448,092	1,775,924
Artificial flowers and feathers.	1,190,690	1,848,569
Perfumery and cosmetics.	423,968	444,964
Pipes and smokers' articles.	278,973	352,684
Other fancy articles.	2,218,491	1,129,211
Fish, fresh.	(Free of duty.)	† 384,926
Fish, cured and preserved.	8,710,882	4,409,316
Flax.	2,188,021	1,636,779
Hemp, and substitutes for.	7,341,956	1,731,896
Jute.	3,249,926	* 1,217,890
Sisal grass and other textile fibers.	7,061,154	* 1,874,941
Flax, hemp, and jute manufactures.	23,421,279	24,024,094
Fruits and nuts.	18,878,801	15,560,822
Furs and manufactures of fur.	5,888,608	7,006,603
Glass and glassware.	7,362,518	8,264,812
Hair, and manufactures of.	160,835	143,019
Hats, bonnets, hoods, and materials.	3,898,657	* 672,395
Hay.	1,148,445	445,461
Hops.	1,053,616	1,797,406
India-rubber manufactures.	867,647	854,645
Iron ore.	2,415,714	2,480,159
Iron and steel manufactures.	41,679,501	53,241,022
Jewelry, and gold and silver wares.	1,861,104	1,868,892
Precious stones and imitations.	12,180,482	12,466,976
Lead, and manufactures of.	657,658	2,560,586
Leather.	6,229,836	6,319,582
Leather manufactures.	6,206,244	6,868,721
Malt, barley.	161,666	78,481
Malt liquors.	1,427,608	1,765,702
Marble and stone.	1,297,637	1,362,718
Metal compositions & manufact's.	4,284,082	7,222,670
Mineral substances.	108,250	116,108
Musical instruments.	1,708,129	1,444,755
Oils.	1,581,739	1,582,462
Paints and colors.	1,348,457	1,489,127
Paper, and manufactures of.	2,816,860	3,031,454
Provisions and dairy products.	2,011,314	2,108,891
Rice and rice flour.	2,042,120	4,143,910
Salt.	950,925	928,889
Seeds.	3,530,631	2,885,926
Silk manufactures.	88,686,874	87,880,148
Soap.	553,440	579,822
Spices, ground.	249,077	262,682
Spirits, distilled.	2,214,200	2,209,736
Sponges.	416,718	431,878
Sugar, beet.	18,848,417	\$9,861,968
Sugar, cane.	66,187,726	\$ 42,409,253
Molasses.	5,159,481	\$ 698,197
Sugar, refined, and confectionery.	39,060	288,094
Tobacco, leaf.	17,605,192	18,284,162
Tobacco, manufactured.	4,105,262	8,886,899
Vegetables.	4,455,874	7,076,874
Wines, sparkling.	4,752,572	5,615,872
Wines, still, in casks.	2,450,174	2,641,816
Wines, still, in bottles.	1,687,210	1,749,872
Wood, and manufactures of.	12,999,881	14,611,214
Wools, clothing.	8,894,760	6,919,918
Wools, combing.	1,905,970	1,551,490
Wools, carpet and other.	9,463,358	9,759,969
Woolen manufactures.	56,582,432	41,060,050
Zinc, spelter, and manufactures of.	140,700	129,587
All other dutiable articles.	5,200,202	6,481,935
Total dutiable articles.	\$523,641,780	\$478,674,844

* Prior to Oct. 6, 1890. For the remaining period see the preceding table.

† From July 1 to Oct. 6, 1890. Since the latter classed under manufactures of cotton, flax, silk, or wool, according to materials of chief value.

‡ Since Oct. 6, 1890, only.

§ For nine months ending March 31, 1891. For the remaining three months see the preceding table.

The declared prices of cattle in the foreign markets averaged \$5.56 a head in 1891, having fallen from \$13.47 in 1887; the average price of the horses imported was \$78.05, against \$49.74 in 1890. There was an advance of 25 per cent. and upward in the average cost of cereals. Crude opium advanced from \$2.50 to \$2.86 a pound. Sal soda and caustic soda remained 1 and 2 cents a pound respectively. Copper rose from 7 to 8 cents. Unbleached cottons were still 9 cents a yard, while bleached and dyed goods went up from 13 to 14 cents. Flax was a little lower, hemp was 25 per cent. below the ruling prices in 1890, jute fell off almost as much, and sisal grass a full third. The prices of figs and prunes were double those of the previous year, while raisins and nuts did not vary. Higher prices for window glass account partly for the increase in the value of the glass imports. The imports of hops fell from 6,539,516 to 4,019,603 pounds, but the value was nearly 75 per cent. greater because the price went up from 16 to 45 cents a pound. Linseed went down 7 per cent. in price. Raw sugar averaged 3 cents a pound in both years. Tobacco imported for cigar wrappers was 58 cents a pound, or 3 cents less in 1891. Clothing wools were 21 cents a pound, 2 cents less; combing wools were 23 cents, having fallen 2 cents; and carpet wools were 11 cents, a cent lower. The carpets imported were of much higher grade than in years past. The imports of dutiable live animals included 9,652 cattle, 16,093 horses, and 336,159 sheep, against 26,760 cattle, 38,248 horses, and 377,491 sheep in 1890. The imports of barley fell off from 11,332,545 to 5,078,733 bushels, and those of other grain and flour in a like ratio, with the exception of wheat. The importation of cement, though at higher prices, was nearly 30 per cent. greater in quantity. The imports of unbleached cotton cloth increased from 1,508,239 to 1,802,397 square yards, and those of other piece goods from 26,251,402 to 31,055,214 square yards. The imports of cured fish were greater in quantity than in 1890. The imports of flax fell off 25 per cent., and those of hemp to less than a third of the quantity imported in the previous year. Of the fruits, those that rose in price were imported in smaller quantities, while the rest show a considerable expansion of trade. A larger sum than the entire increase in the value of the iron and steel manufactures is represented by the increased imports of tin plate in anticipation of the duty, the total imports being 1,036,489,074 pounds, of the value of \$35,746,920, as compared with 680,060,925 pounds, of the value of \$20,928,150, in 1890, at the same average price of 3 cents a pound. The imports of linseed declined from 2,391,175 to 1,515,546 bushels. The imports of brandy were less, those of champagne 15 per cent. more in quantity, and those of still wines showed about half that increase. The imports of fine wool for cloth manufacture amounted to 32,230,935 pounds, nearly double as much as in 1890; those of the combing wools were over 10 per cent. less, and those of carpet wools were 10 per cent. greater. While the imports of carpets were larger in quantity and nearly twice as great in value as in the preceding year, the imports of cloth decreased from 16,847,562 to 12,109,825 pounds, and those of dress goods from

116,992,488 to 86,644,096 square yards. Those of shoddy and rags fell from 4,980,327 to 1,185,591 pounds, and those of yarns from 3,473,219 to 2,004,093 pounds.

A large increase in the import of sugar was caused by its transfer to the free list three months before the end of the fiscal year 1891. The total importation of raw sugar, including the import from the Hawaiian Islands, was 3,479,260,785 pounds, valued at \$105,566,355, against 2,933,932,524 pounds, of the value of \$96,085,971, in 1890. A material increase in the value imported is observed in the following articles from the free list: Coffee, of which the imports were \$17,856,345 more in value than in 1890; hides and skins, which show an increase of \$6,048,873; chemicals,

lected on dutiable merchandise was 46.26 per cent. in 1891, 44.41 per cent. in 1890, 45.13 per cent. in 1889, 45.63 per cent. in 1888, and 47.10 per cent. in 1887. Taking free and dutiable merchandise together, the duties averaged 25.25 per cent. in 1891, 29.12 per cent. in 1890, 29.50 per cent. in 1889, 29.99 per cent. in 1888, and 31.02 per cent. in 1887.

Exports.—The total value of the exports of domestic merchandise for the fiscal year 1891 was \$872,270,283, which was greater than in any previous year except 1881 and \$26,976,455 in excess of the domestic exports of 1890. The values of the chief staples of the export commerce for the last three years are given in the following table:

PRINCIPAL EXPORTS.	1889.	1890.	1891.
Cotton, and manufactures of.....	\$247,987,914	\$260,968,069	\$304,317,755
Provisions, comprising meat and dairy products.....	104,122,444	186,264,506	189,017,471
Breadstuffs.....	128,876,661	154,925,927	128,121,656
Mineral oils.....	49,918,677	51,408,089	52,026,784
Animals.....	18,874,805	88,638,128	32,565,086
Iron and steel, and manufactures of, including ore.....	21,156,109	25,542,208	28,909,614
Wood, and manufactures of.....	26,910,672	28,274,529	26,270,040
Tobacco, and manufactures of.....	22,609,668	25,355,601	25,220,472
Leather, and manufactures of.....	10,747,710	12,438,847	13,278,847
Coal.....	6,690,479	6,856,088	8,391,026
Oil cake and oil-cake meal.....	6,927,912	7,999,926	7,452,094
Copper ore.....	7,518,258	6,053,236	7,260,898
Sugar and molasses.....	2,117,538	3,029,418	7,099,788
Chemicals, drugs, dyes, and medicines.....	5,542,753	6,224,504	6,545,354
Fish.....	5,969,235	6,040,826	4,996,621
Spirits of turpentine.....	3,777,525	4,590,331	4,668,140
Copper, and manufactures of, not including ore.....	2,348,954	2,348,392	4,614,597
Vegetable oils.....	1,583,788	5,672,441	4,302,936
Total.....	\$668,178,092	\$777,027,661	\$805,429,124

drugs, and dyes, of which \$4,825,324 worth more were imported; fruits and nuts, the imports of which were \$3,555,144 greater; and crude rubber and gutta-percha, imports of which were \$3,166,292 more in value. In the list of dutiable articles the imports of iron and steel and the manufactures thereof were \$11,575,976 more in value; metals, metal compositions, and manufactures thereof show an increase of \$2,988,588; raw wool was imported to the amount of \$2,967,289 more; and vegetables came in to the amount of \$2,725,722 more. The transfer of jute, sisal grass, and other fibrous materials to the free list caused a decrease of \$13,863,081 under the head of flax, hemp, and jute in the dutiable list, which was more than offset by an increase of \$14,608,019 under the head of textile grasses and vegetable fibers in the free list. There was a decrease of \$5,249,450 in the imports of unmanufactured silk among the free articles, and among the dutiable articles the largest decrease was \$15,522,352 under the head of wool and woolen manufactures. The imports of manufactures of flax, hemp, jute, and allied substances fell off \$4,397,185.

The total value of imported merchandise free of duty entered for consumption in 1891 was \$388,064,404, against \$266,103,047 in 1890, \$255,574,630 in 1889, \$244,104,852 in 1888, and \$233,093,659 in 1887. The total value of dutiable merchandise entered for consumption was \$406,455,173 in 1891, \$507,571,764 in 1890, \$484,856,768 in 1889, \$468,143,774 in 1888, and \$450,325,322 in 1887. In 1891 the amount of duty collected was \$215,790,686. The average rate col-

lected on dutiable merchandise was 91.5 per cent. of the total domestic exports in 1889, 91.99 per cent. in 1890, and 92.34 per cent. in 1891.

Grouped according to the source and nature of the articles, the domestic exports of the last two years are classified as follow:

DOMESTIC EXPORTS.	1890.	1891.
Agricultural products.....	\$829,785,917	\$642,751,344
Manufactured products.....	151,181,297	168,927,815
Mineral products.....	22,351,746	22,054,970
Forest products.....	29,478,084	28,115,718
Fishery products.....	7,466,044	6,208,577
Other products.....	5,055,740	8,612,864
Total.....	\$845,298,828	\$872,270,283

Products of agriculture constituted 73.69 per cent. of the total value of exports in 1891, and in 1890 they made 74.51 per cent. of the whole. The proportionate value of the mineral products, which include mineral oils, declined from 2.64 to 2.53 per cent., that of forest products from 3.48 to 3.29 per cent., that of fishery products from .89 to .71 per cent., and that of miscellaneous products from .60 to .41 per cent., these variations being caused by the larger absolute and relative exportation of manufactured products, which formed 19.37 per cent. of the whole in 1891, as compared with 17.88 per cent. in 1890.

The values of the articles or classes of articles, the produce or manufacture of the United States, exported during the year ending June 30, 1891, compared with the values for the preceding year are presented in the following table:

ARTICLES.	1890.	1891.	ARTICLES.	1890.	1891.
Agricultural implements.....	\$3,559,184	\$3,219,180	Stereotype and electrotype plates.....	30,662	28,310
Animals.....	38,693,128	32,935,086	Straw and palm-leaf manufactures.....	68,368	78,344
Art works.....	228,082	406,374	Sugar and molasses.....	3,022,413	7,099,788
Bark, for tanning.....	263,754	241,852	Tin, manufactures of.....	254,506	249,836
Billiard tables.....	42,466	49,224	Tobacco, unmanufactured.....	21,479,556	21,091,739
Blacking.....	238,391	219,903	Tobacco, manufactured.....	3,676,045	4,186,713
Boots, hooft, and horns.....	271,533	325,710	Trunks and traveling bags.....	209,850	202,520
Books, maps, and engravings.....	1,836,094	1,820,470	Umbrellas, parasols, and sun-shades.....	1,716	4,013
Brass, and manufactures of.....	467,313	296,349	Varnish.....	216,488	203,455
Breadstuffs.....	154,925,927	128,121,656	Vegetables.....	1,357,095	1,335,975
Bricks.....	99,293	99,175	Vessels sold to foreigners.....	104,798	96,422
Broom corn.....	111,147	172,191	Vinegar.....	10,520	10,459
Brooms and brushes.....	151,128	150,609	Wax, bees'.....	19,727	80,027
Candles.....	143,073	149,112	Whalebone.....	705,500	717,230
Carriages and horse-cars.....	2,056,980	2,015,870	Wine.....	270,980	371,477
Cars, railroad.....	2,639,698	2,885,250	Firewood.....	16,746	7,026
Casings for sausages.....	697,772	641,075	Lumber, timber, and wood manufactures.....	23,257,783	26,263,014
Chemicals, drugs, and dyes.....	6,224,504	6,545,354	Wool, raw.....	83,543	39,423
Clocks and watches, and parts of.....	1,695,186	1,580,164	Wool, manufactures of.....	437,479	519,193
Coal, anthracite.....	3,819,726	3,796,495	Zinc, and manufactures of.....	156,150	131,782
Coal, bituminous.....	3,536,362	4,594,531	All other manufactured articles.....	1,261,006	1,365,760
Coffee, ground, cocoa, chocolate.....	93,735	86,936	All other unmanufactured articles.....	482,825	492,404
Copper ore.....	6,053,236	7,260,593			
Copper, manufactured.....	2,349,392	4,614,597			
Cotton, Sea Island.....	2,280,717	3,062,968			
Cotton, other, raw.....	248,683,075	237,649,930			
Cotton cloths, colored.....	2,366,435	2,590,934			
Cotton cloths, uncolored.....	5,430,403	9,277,112			
Cotton clothing.....	240,796	273,169			
Other cotton manufactures.....	1,391,643	1,453,642			
Earthen, stone, and china ware.....	175,477	159,526			
Eggs.....	58,675	64,259			
Fancy articles.....	1,045,364	1,186,107			
Fertilizers.....	1,618,681	2,182,274			
Fish, fresh, smoked, cured, and canned.....	6,040,826	4,996,621			
Flax, hemp, and jute manufactures.....	2,094,507	1,504,740			
Fruits, fresh, dried, and preserved.....	4,059,547	2,434,793			
Furs and fur skins.....	4,661,934	3,236,705			
Glass and glass-ware.....	882,677	868,374			
Glucose.....	555,176	1,394,131			
Glue.....	88,434	110,292			
Grease and soap stock.....	1,506,519	2,063,886			
Gunpowder.....	95,348	88,676			
Other explosives.....	773,380	906,870			
Hair, and manufactures of.....	344,558	394,544			
Hay.....	567,558	470,223			
Hides and skins.....	1,328,635	1,338,635			
Honey.....	113,101	83,325			
Hops.....	1,110,571	2,327,474			
Ice.....	111,762	91,493			
India-rubber manufactures.....	1,090,307	2,236,448			
Ink, printers', and other.....	144,057	122,235			
Instruments.....	1,429,785	1,575,444			
Iron and steel, and manufactures of.....	25,542,208	28,909,614			
Jewelry.....	662,759	882,440			
Lamps and lighting apparatus.....	523,021	509,518			
Lead, and manufactures of.....	134,317	182,412			
Leather, and manufactures of.....	12,433,547	13,273,847			
Lime and cement.....	134,994	143,938			
Malt liquors.....	654,408	672,243			
Marble and stone manufactures.....	961,316	845,154			
Matches.....	62,284	73,220			
Musical instruments.....	1,105,134	1,326,389			
Naval stores.....	2,853,515	3,523,473			
Oakum.....	82,021	35,106			
Oil cake and oil meal.....	7,999,926	7,452,094			
Animal oils.....	1,686,643	1,231,733			
Mineral oils, crude.....	6,744,235	5,876,452			
Mineral oils, refined.....	4,653,854	46,150,282			
Vegetable oils.....	5,672,441	4,302,936			
Ore, gold and silver.....	1,973,976	34,542			
Paints and colors.....	573,103	690,693			
Paper, and manufactures of.....	1,226,686	1,299,169			
Paraffine and paraffine wax.....	2,405,709	3,714,649			
Plated ware.....	440,714	414,719			
Provisions.....	136,264,596	139,017,471			
Quicksilver.....	188,096	88,359			
Rags.....	18,189	9,892			
Rice.....	20,728	33,012			
Salt.....	29,073	29,510			
Seeds.....	2,637,888	2,500,899			
Silk manufactures.....	54,449	92,071			
Soap.....	1,109,017	1,137,263			
Spermaceti.....	116,757	71,202			
Spices, ground and prepared.....	25,457	22,440			
Spirits.....	1,638,110	1,837,431			
Spirits of turpentine.....	4,590,931	4,663,140			
Starch.....	375,115	475,817			
Stationery, other than paper.....	490,673	560,456			

Total domestic exports..... \$345,293,828 \$372,270,258

The exports of live animals included 374,679 cattle, exported at the average price of \$81.26 a head, as compared with 394,836, at the export price of \$79.18, in 1890; 95,654 hogs, worth \$11.99 apiece, against 91,148, worth \$9.97; 3,110 horses, of the average value of \$252.38, against 3,501, at \$194.35 each; 2,184 mules, worth \$127.59 each; and 60,947 sheep, worth \$4.28 each. The export of wheat was 55,131,948 bushels, at 93 cents a bushel, against 54,387,767, at 83 cents, in 1890; that of corn fell off from 101,973,717 bushels, at 49 cents, to 30,768,213 bushels, at 57 cents; that of wheat flour declined from 12,231,711 to 11,344,304 barrels, of the total values, respectively, of \$57,036,168 and \$54,705,616; of oats, only 953,010 bushels were exported, against 13,692,776 in 1890; and of rye, 332,739 bushels, against 2,257,377. Ginseng, once prominent among the minor exports, is found in decreasing quantities, and the price has risen from \$1.99 a pound in 1885 to \$3.39 in 1891, when the export amounted to 283,000 pounds. The export of copper ore in 1891 was 38,562 tons, an increase of 1,722 tons; that of copper ingots and bars and old copper was 34,554,517 pounds, an increase of 14,317,108 pounds, at 13 cents a pound, 2 cents better than in 1890. The export of Sea Island cotton was 14,588,092 pounds, an increase of 5,367,273 pounds, at 21 cents a pound, 4 cents below the price in 1891. The price of middling upland fell from 11 to 10 cents, while the cotton export, including Sea Island, increased from 5,020,913 bales, or 2,471,799,853 pounds, in 1890, to 5,820,779 bales, or 2,907,358,795 pounds, in 1891. The exports of colored cloths amounted to 39,016,682 yards, which was 3,293,088 yards less than in 1890; but the increase in the quantity of exports of uncolored cloths, of which 135,529,590 yards were exported, made the gain in cotton manufactures equally large in quantity and in value, for the price for both descriptions of cloth continued to average 7 cents a yard. There was little variation in the fish exports, except those of canned salmon, which fell off from 28,681,661 to 22,367,225 pounds. Under the head of fruit the drop in the export of apples from 453,506 to 135,207 barrels, and that of dried apples from 20,861,462 to 6,

973,108 pounds, is particularly noticeable, prices advancing only 20 per cent. The export of glucose was 58,149,427 pounds, an increase of 19,893,266 pounds, at 2 cents, the price for the last three years. Hops were exported to the amount of 8,736,080 pounds, 1,195,226 pounds more than last year, at 27 cents, or 12 cents more a pound. Among the iron and steel exports there was some increase in sewing machines, boilers, wire, builders' hardware, miscellaneous machinery, castings, cutlery, and fire-arms; a large increase in the number and value of locomotive engines; and a decrease in scales, saws and tools, stationary engines, nails, and printing presses. The exports of lamps, saddlery, furniture, jewelry, organs and piano-fortes, toilet soap, matches, paints, and various fine manufactures show a steady growth, while those of paper hangings and writing paper, boots and shoes, sole leather, plated ware, trunks, and varnish were smaller in 1891 than in the preceding year. The export of rosin increased from 1,601,377 to 1,790,251 barrels. The oil cake and oil meal shipped abroad was 633,344,851 pounds, a decrease of 78,359,522 pounds. The exports of lard and of whale oil were considerably less in quantity. The kerosene export increased from 523,295,090 to 571,119,805 gallons, the price remaining 7 cents, while the export of crude petroleum was 91,415,095 gallons, 4,035,553 gallons less than in 1890, at 6 cents, a cent lower per gallon. The cotton-seed oil export was 11,003,160 gallons, a decrease of 2,381,235 gallons, the price falling from 39 to 36 cents, owing to competition in Egypt and elsewhere. The export of oleomargarine or imitation butter was smaller, but that of the oil, which is the form in which the bulk of it is sent abroad, increased from 68,218,098 to 82,133,876 pounds, still at the average price of 10 cents a pound. Among the other beef exports we see an increase in the quantity of canned beef from 82,638,507 to 109,585,727 pounds, and in that of fresh beef from 173,237,596 to 194,045,638 pounds, at an advance in price from 7 to 8 cents, while the export of pickled or salted beef declined from 97,508,419 to 90,286,979 pounds, with but little difference in the total value, owing to higher prices; and the tallow export, 111,689,251 pounds, showed a slight falling off but an improvement in the value. The export price of bacon and hams has been 8 cents for two years. In the export of bacon, 514,675,557 pounds, there was a falling off of 17,224,120 pounds in quantity and \$1,744,646 in value, and the difference in the value not quite made good by the increase in the shipments of hams from 76,591,279 to 84,410,108 pounds, in those of pickled pork from 79,788,868 to 81,317,364 pounds, and in the lard export at 7 cents a pound, as in 1890, from 471,083,598 to 493,343,927 pounds. The exports of butter fell off from 20,748,042 to 15,187,114 pounds, and those of cheese from 95,376,053 to 82,133,876 pounds; and the decline was offset by no advance in prices, which remained 14 cents for butter and 9 cents for cheese. The export of rum increased from 555,749 to 1,025,226 gallons, and there was an export of 136,529 gallons of brandy against 3,334 gallons in 1890, while the export of alcohol was 25 per cent. larger, but a falling off of more than 50 per cent. in the exports of whisky made the total exports

of spirits not much larger, though prices were much higher. The wine exported in casks increased from 393,323 to 543,192 gallons at 65 instead of 61 cents per gallon. The export of spirits of turpentine increased from 11,248,920 to 12,243,621 gallons, at 38 cents a gallon, a decline of 3 cents. The export of refined sugar increased from 27,018,002 pounds at 7 cents to 108,228,620 pounds at 6 cents. The average export price of leaf tobacco was 9 cents a pound in both years, while the quantity of unmanufactured tobacco exported declined from 255,647,026 to 249,232,605 pounds. The prices of lumber and timber were considerably lower, and therefore, in spite of larger exports and the growth of the trade in wood manufactures, the total value was less than in 1890. The material increase in the values of the principal domestic exports was \$39,744,106 in raw cotton, \$4,237,360 in refined sugar, \$3,605,580 in cotton manufactures, \$3,367,406 in iron and steel and their manufactured products, \$2,752,965 in provisions and dairy products, \$2,265,205 in copper, \$1,534,938 in coal, \$1,491,428 in refined mineral oil, \$1,305,940 in paraffine and paraffine wax, \$1,216,903 in hops, and \$1,207,657 in copper ore. Against these gains must be set a decrease of \$26,804,271 in the value of breadstuffs, \$2,004,489 in wood and wood manufactures, \$1,939,434 in gold and silver ores, \$1,624,754 in fruits, \$1,425,229 in furs and fur skins, \$1,369,505 in vegetable oils, and \$1,044,205 in the fish exports.

The total value of foreign merchandise re-exported in 1891 was \$12,210,527, against \$12,534,856 in 1890. The re-exports of dutiable merchandise were \$7,049,819 in 1891, against \$7,992,493 in 1890; and those of free merchandise were \$5,160,708, against \$4,542,363.

Movement of the Precious Metals.—The imports of gold during the fiscal year 1891 amounted to \$18,232,567, and those of silver to \$18,026,880, making a total of \$36,259,447, while the exports of gold amounted to \$86,302,654, and those of silver to \$22,590,988, a total of \$108,953,642, which gives an excess of exports of specie over imports of \$72,694,195. There was an excess of exports amounting to \$18,172,094 in 1890, when \$12,943,342 in gold and \$21,032,984 in silver were imported and \$17,274,491 in gold and \$34,873,929 in silver were exported. In 1899 \$67,678,460 of specie were drained from the country, the exports being \$59,952,285 in gold and \$36,689,248 in silver, and the imports \$10,284,858 in gold and \$18,678,215 in silver. The year before that there was a net importation of \$12,923,803, and for a long time previous the movement of specie was to the United States. These figures do not include the metals not yet extracted from ores and copper matte, of which \$283,545 in gold and \$8,252,036 in silver were imported, and \$100,226 in gold and \$283,545 in silver were exported in 1891.

Commercial Relations.—The tables on page 190 show the distribution of the commerce of the United States by countries during the year ending June 30, 1891.

The imports from European countries formed 53.02 per cent. of the total imports in 1881, 56.27 per cent. in 1886, and 57.01 per cent. in 1891; and of the domestic exports 85.46 per cent. went to Europe in 1881, 80.13 per cent. in 1886, and

COUNTRIES.	Domestic exports.	Foreign exports.	Imports.	Total commerce.	Excess of imports or exports.
Great Britain and Ireland	\$441,599,807	\$3,814,219	\$194,728,262	\$640,137,288	* \$250,690,764
Germany.....	91,684,981	1,110,475	97,316,388	190,111,889	4,520,927
France.....	59,826,739	866,451	76,688,995	187,882,185	15,995,805
Belgium.....	26,694,150	846,274	10,945,672	88,486,096	* 16,594,752
Italy.....	15,927,274	119,651	21,678,208	87,725,139	5,631,258
Netherlands.....	23,816,814	297,168	12,422,174	86,536,151	* 11,691,803
British North America	87,345,515	2,098,240	89,484,585	78,878,290	* 9,220
Mexico.....	14,199,080	770,540	27,295,992	42,265,612	12,826,372
West Indies.....	38,416,178	1,048,273	86,461,705	120,921,156	82,002,254
Brazil.....	14,049,273	70,973	88,230,595	97,850,841	69,110,849
China.....	8,700,808	700	19,821,850	28,022,558	10,620,942
British East Indies.....	4,399,544	559	38,356,989	27,757,092	18,956,886
Japan.....	4,800,650	7,043	19,309,198	24,116,891	14,501,505
All other countries.....	95,809,970	1,164,966	182,730,638	229,705,574	85,755,702
Total.....	\$872,270,283	\$12,210,527	\$344,916,196	\$1,729,397,006	* \$39,564,614

* Excess of exports.

Between the grand divisions of the globe the trade of 1891 was divided as follows:

GRAND DIVISIONS.	Domestic exports.	Foreign exports.	Imports.	Total commerce.	Excess of imports or exports.
Europe.....	\$697,614,106	\$7,188,941	\$459,305,372	\$1,164,108,419	* \$245,492,675
North America.....	92,358,252	4,160,877	168,226,079	259,775,203	66,676,950
South America.....	33,226,401	431,889	118,736,668	152,444,958	85,028,378
Asia and Oceania.....	43,818,519	361,590	97,893,356	142,068,465	53,718,247
Africa.....	4,788,847	19,050	4,207,146	8,965,043	* 550,751
All other countries.....	489,138	3,180	1,547,575	2,089,918	1,055,287
Total.....	\$872,270,283	\$12,210,527	\$344,916,196	\$1,729,397,006	* \$39,564,614

* Excess of exports.

79·97 per cent. in 1891. In 1881 Great Britain and Ireland furnished 27·15 per cent. of the imports; France, 10·86 per cent.; Germany, 8·25 per cent.; other European countries, 6·76 per cent.; the West Indies, 13·10 per cent.; British America, 5·92 per cent.; South America, 12·55 per cent.; Asia and Oceania, 11·40 per cent.; Mexico, 1·30 per cent.; Central America, 0·54 per cent.; and all other countries, 2·12 per cent. In 1891 Great Britain's share in the imports was 23·05 per cent.; Germany's, 11·52 per cent.; that of France, 9·08 per cent.; of the rest of Europe, 10·71 per cent.; of the West India islands, 10·23 per cent.; of British America, 4·67 per cent.; of Mexico, 3·23 per cent.; of Central America, 1·19 per cent.; of South America, 14·05 per cent.; of Asia and Oceania, 11·59 per cent.; of other countries, 0·68 per cent. Great Britain took 54·01 per cent. of the domestic exports in 1881 and 50·62 per cent. in 1891; France took 10·16 per cent. in 1881 and 6·86 per cent. in 1891; Germany took 7·79 per cent. in 1881 and 10·49 per cent. in 1891; other European countries took 13·50 per cent. in 1881 and 12 per cent. in 1891; British possessions in North America took 4·05 per cent. in 1881 and 4·29 per cent. in 1891; the West Indies took 3·29 per cent. in 1881 and 3·83 per cent. in 1891; Mexico took 1·04 per cent. in 1881 and 1·63 per cent. in 1891; the rest of North America took 0·27 per cent. in 1881 and 0·85 per cent. in 1891; South America took 2·78 per cent. in 1881 and 3·81 per cent. in 1891; Asia and Oceania took 2·55 per cent. in 1881 and 5·02 per cent. in 1891; and all other countries took 0·56 per cent. in 1881 and 0·60 per cent. in 1891.

The trade with the United Kingdom forms 55 per cent. of the American trade with Europe, and about 37 per cent. of the total foreign commerce of the United States. Next in value is the trade with North America, including the West Indies.

The commerce with North America, including Mexico, Central America, and the West Indies, amounted in 1891 to \$259,775,208, in which sum the imports stand for \$163,226,079 and the exports for \$66,676,950. Owing to defective collection of statistics on the Canadian and Mexican frontiers the exports to those countries are probably stated too low by at least \$30,000,000. As compared with the figures for 1890 there was an increase in 1891 of \$10,813,735 in the domestic exports to France, of \$7,369,766 in the exports to Germany, of \$5,756,518 in those to China, of \$2,146,777 in those to Brazil, of \$1,871,620 in those to Spain, of \$1,723,598 in those to Australasia, of \$1,532,972 in those to Mexico, of \$1,475,641 in those to Central America, and of \$1,329,226 in those to Holland. On the other hand, the exports of domestic products to the Argentine Republic fell \$5,604,552; those to Great Britain and Ireland, \$2,859,202; those to Russia, \$2,769,553; and those to British North American possessions, \$1,198,939. The imports from Brazil were \$23,911,839 more in 1891 than in 1890, those from the West Indies were \$8,457,464 more, those from Great Britain \$8,234,346 more, those from Mexico \$4,605,077 more, those from China \$3,061,379 more, those from British India \$2,552,670 more, those from Australasia \$1,961,345 more, those from Central American states \$1,746,678 more, those from the Hawaiian Islands \$1,581,689 more. There was a decrease of \$6,425,417 in the imports from the Philippine Islands, of \$4,607,059 in those from the Netherlands, of \$1,794,126 in those from Japan, and of \$1,521,300 in those from Germany. The total imports from South America, the West Indies, Central America, and Mexico in 1891 amounted to \$242,512,577, which was 28·70 per cent. of the total imports of merchandise. The exports to the same countries were \$90,413,516, or 10·22

per cent. of the total exports of domestic products. The import and export trade with those countries has increased gradually. In 1870 the imports, from them amounted to \$117,398,951, and the exports to them were \$55,140,322 in value. In 1880 the imports from them were \$178,985,906, and the exports to them \$61,546,474. The trade with the countries to the south has already begun to expand as the result of the recently concluded reciprocity treaties. In 1870 the trade with them constituted 20.82 per cent. of the total foreign commerce of the United States, in 1880 it was 15.99 per cent., and in 1891 it was 19.21 per cent. Of the imports from Mexico in 1891, 85.58 per cent. consisted of merchandise free of duty; of those from Central America, 99.88 per cent.; from the West Indies, 48.66 per cent.; from South America, 93.04 per cent. The percentage of dutiable goods from the entire group was 23.36 per cent., and under the new tariff it is expected to be not more than 10 per cent. The principal articles imported from these countries are sugar, coffee, India-rubber, hides and skins, silver ore, tobacco, and fruits, of which only tobacco, silver ore, and certain fruits are now dutiable.

The trade with the different countries of South and Central America is shown in the following table, which gives the imports from each one in 1881 and the exports, domestic and foreign together:

COUNTRIES.	Imports.	Exports.
Mexico	\$27,295,992	\$14,969,620
British Honduras.....	219,090	462,889
Guatemala.....	2,618,199	1,997,944
Nicaragua.....	1,705,361	1,692,942
Costa Rica.....	2,592,505	1,381,049
Salvador.....	1,758,066	1,150,460
Honduras.....	1,159,591	640,921
Cuba and Puerto Rico.....	64,878,505	14,380,122
British West Indies.....	16,293,184	9,779,138
Other West India Islands.....	5,290,016	10,890,191
Colombia.....	4,765,854	8,125,644
Venezuela.....	12,075,541	4,754,956
British Guiana.....	4,833,206	1,858,742
Dutch Guiana.....	724,190	253,958
French Guiana.....	46,520	155,954
Brazil.....	88,280,595	14,120,246
Uruguay.....	2,356,739	1,076,575
Argentine Republic.....	5,976,544	2,820,085
Chili.....	8,448,290	8,145,625
Bolivia.....	8,734	6,880
Peru.....	886,513	1,899,991
Ecuador.....	836,437	908,159
Total	\$242,512,577	\$9,418,516

The chief exports from the United States to this group of countries have been manufactures of iron and steel, cotton manufactures, manufactures of wood, wheat flour, refined petroleum, and agricultural implements.

Navigation.—The number of vessels in the foreign trade entered at the seaports of the United States during the year ending June 30, 1891, was 18,197, of 15,894,611 tons, of which 5,778, of 3,670,372 tons, were American, and 12,419, of 11,724,239 tons, were foreign. Of the American vessels, 4,558, of 3,031,162 tons, arrived with cargoes, and 5,778, of 3,670,372 tons, in ballast; and of the foreign vessels, 10,325, of 10,023,127 tons, were with cargoes, and 2,094, of 1,701,112 tons, in ballast. The number of entrances at the port of New York was 5,420 vessels, measuring 6,452,877 tons, of which 1,423 vessels, of

935,087 tons, were American vessels with cargoes; 1,424, of 935,172 tons, were American vessels in ballast; and 3,996, of 5,517,705 tons, were foreign vessels with cargoes. At Boston and Charlestown the entrances numbered 2,472, of 1,502,215 tons, of which 386, of 196,826 tons, were American, and 2,086, of 1,305,389 tons, were foreign vessels; at Philadelphia, 316 American vessels, of 202,528 tons, and 992 foreign vessels, of 1,148,938 tons, were entered; at San Francisco, 485 American and 370 foreign vessels, of 516,159 and 579,617 tons, respectively; at Puget Sound, 1,308 American and 173 foreign vessels, of 944,219 and 134,009 tons, respectively; at New Orleans, 216 American vessels, of 114,349 tons, and 624 foreign vessels, of 771,436 tons; at Baltimore, 175 American vessels, of 65,673 tons, and 448 foreign vessels, of 646,160 tons; at Pensacola, 40 American vessels, of 20,544 tons, and 361 foreign vessels, of 291,723 tons; at Passamaquoddy, 215 American vessels, of 215,177 tons, and 519 foreign vessels, of 54,684 tons; at Savannah, 9 American vessels, of 3,333 tons, and 270 foreign vessels, of 178,927 tons; at Galveston, 31 American vessels, of 6,906 tons, and 152 foreign vessels, of 161,152 tons. The tonnage entered at some of the other seaports was as follows: Key West, 131,466; Pearl River, 108,576; Mobile, 103,284; Charleston, 94,869; San Diego, 90,927; Portland and Falmouth, 89,690; Brunswick, 84,503; Willamette, 77,597; Oregon, 68,306; Wilmington, N. C., 65,664; Wilmington, Cal., 54,079.

The total number of vessels cleared at the ocean ports during the fiscal year 1891 was 18,327, of 15,411,160 tons, of which 5,932, of 3,716,083 tons, were American, and 12,395, of 11,695,077 tons, were foreign. Of the American vessels, 4,058, of 2,859,100 tons, were cleared with cargoes, and 1,874, of 856,983 tons, in ballast; and of the foreign vessels, 9,272, of 11,019,092 tons, were cleared with cargoes, and 3,123, of 675,985 tons, in ballast. At the port of New York 1,007 American vessels, of 785,194 tons, and 3,805 foreign vessels, of 5,263,590 tons, were cleared during the year; at Boston and Charlestown, 474 American vessels, of 189,374 tons, and 1,992 foreign vessels, of 1,037,443 tons; at Puget Sound, 1,412 American vessels, of 1,021,665 tons, and 179 foreign vessels, of 138,490 tons; at San Francisco, 450 American vessels, of 523,325 tons, and 352 foreign vessels, of 544,958 tons; at Philadelphia, 262 American vessels, of 184,210 tons, and 735 foreign vessels, of 807,753 tons; at Baltimore, 161 American vessels, of 48,316 tons, and 545 foreign vessels, of 853,641 tons; at New Orleans, 186 American vessels, of 94,333 tons, and 636 foreign vessels, of 787,424 tons.

The number of vessels entered at the lake ports during 1891 from the ports of the Dominion of Canada was 14,381, of 2,809,684 tons, making the total number of vessels in the foreign trade entered at all the ports of the United States 32,578, and the aggregate tonnage 18,204,295. The clearances at the lake ports numbered 14,376, representing 2,849,672 tons, making the aggregate of shipping cleared at all ports 32,703 vessels, of 18,260,832 tons. Of the vessels entered at the lake ports, 3,096, of 349,735 tons, were American vessels with cargoes; 2,172, of 300,697 tons, were American vessels in ballast; 6,

209, of 1,286,382 tons, were foreign vessels with cargoes; and 2,904, of 812,870 tons, were foreign vessels in ballast. Of the total number cleared at lake ports, 2,154, of 442,007 tons, were American vessels with cargoes; 3,096, of 297,312 tons, were American vessels in ballast; 4,210, of 1,299,753 tons, were foreign vessels with cargoes; and 4,916, of 10,600 tons, were foreign vessels in ballast.

The number of vessels entered from the various foreign countries, with their tonnage, is given in the following table:

COUNTRIES.	ENTERED.			
	American vessels.		Foreign vessels.	
	No.	Tonnage.	No.	Tonnage.
Argentine Republic.....	29	18,810	196	150,759
Austria-Hungary.....	.....	.....	16	32,210
Belgium.....	7	12,648	193	450,947
Brazil.....	72	84,599	481	391,521
Central American States:				
Costa Rica.....	4	1,641	45	32,950
Guatemala.....	8	2,557	5	5,065
Honduras.....	157	70,414	109	39,372
Nicaragua.....	49	27,273	73	39,158
Salvador.....	1	443	.....	.....
Chili.....	44	37,617	75	91,063
China.....	10	11,120	22	29,069
Colombia.....	111	152,145	88	48,474
Denmark.....	.....	.....	8	13,290
Denmark, colonies of.....	28	6,331	47	28,199
Ecuador.....	8	847	.....	.....
France.....	6	9,291	24	868,311
France, colonies of.....	57	18,838	78	55,416
Germany.....	1	1,117	796	1,595,145
Germany, colonies of.....	2	404	.....	.....
Great Britain and Ireland.....	64	125,371	1,882	4,056,318
Great Britain, colonies of:				
Canada.....	5,270	712,676	9,194	2,119,307
British Columbia.....	1,487	1,222,590	192	150,267
Maritime provinces.....	1,089	497,709	8,729	604,006
Newfoundland.....	67	6,946	85	10,489
British West Indies.....	460	157,017	963	507,210
British Honduras.....	2	687	21	11,607
British Guiana.....	55	24,147	89	50,383
Australia.....	37	48,281	90	138,504
New Zealand and Tas-				
mania.....	10	6,121	10	7,319
Hong-Kong.....	23	51,187	38	77,736
British India.....	35	40,953	77	142,164
Cape Colony.....	4	1,466	61	47,166
Other British colonies.....	15	6,199	16	20,385
Greece.....	.....	.....	18	23,698
Hayti.....	120	84,581	117	95,591
Hawaii.....	159	114,789	89	35,989
Italy.....	6	6,723	384	457,266
Japan.....	26	36,975	52	81,782
Liberia.....	3	951	.....	.....
Mexico.....	355	105,083	149	111,550
Netherlands.....	.....	.....	132	258,973
Netherlands, colonies of:				
Dutch West Indies.....	22	18,082	17	5,813
Dutch Guiana.....	8	2,775	1	813
Dutch East Indies.....	.....	.....	30	44,952
Peru.....	9	7,777	25	25,313
Portugal.....	3	1,522	58	45,544
Portugal, colonies of.....	21	8,096	99	113,702
Russia in Europe.....	.....	.....	11	5,986
Russia in Asia.....	2	589	4	1,777
Santo Domingo.....	49	26,395	41	13,582
Spain.....	5	4,298	273	323,577
Spain, colonies of:				
Cuba.....	574	680,842	319	686,706
Puerto Rico.....	59	16,821	128	62,665
Philippine Islands.....	5	6,693	23	84,476
Canary Islands.....	.....	.....	41	49,224
Sweden and Norway.....	.....	.....	42	86,791
Turkey.....	.....	.....	2	978
Turkish possessions in				
Africa.....	.....	.....	23	17,762
Uruguay.....	.....	.....	11	12,441
Venezuela.....	41	49,376	19	9,660
All other countries.....	11	4,126	.....	.....
Whale fisheries.....	22	3,076	.....	.....
Total vessels entered.....	11,046	4,380,804	21,532	13,823,491

The steam vessels entered at the ocean ports in 1891 numbered 8,233, of 11,116,028 tons, of which 2,626, of 2,333,904 tons, were American, and 5,607, of 8,782,124 tons, were foreign steamers. There were cleared 8,231 steamers, of 11,153,393 tons, of which 2,694, of 2,374,069 tons, were American, and 5,597, of 8,779,324 tons, foreign.

The number of vessels, American and foreign, cleared for ports of the Argentine Republic in 1891 was 127, of 85,735 tons; for Austrian ports, 21, of 15,769 tons; for Belgium, 235, of 499,937 tons; for Brazil, 300, of 253,191 tons; for Costa Rica, 41, of 24,670 tons; for Guatemala, 36, of 22,018 tons; for Honduras, 240, of 94,585 tons; for Nicaragua, 134, of 64,365 tons; for Salvador, 3, of 396 tons; for Chili, 55, of 48,216 tons; for China, 54, of 70,041 tons; for Colombia, 187, of 203,992 tons; for Denmark, 43, of 55,153 tons; for Danish colonies, 72, of 46,563 tons; for Ecuador, 11, of 6,451 tons; for French Atlantic ports, 472, of 766,819 tons; for French ports on the Mediterranean, 92, of 117,598 tons; for Miquelon, Langley, and St. Pierre, 35, of 4,866 tons; for the French West Indies, 157, of 70,313 tons; for French Guiana, 21, of 4,042 tons; for French possessions in Asia, 4, of 5,313 tons; for French possessions in Oceania, 18, of 6,531 tons; for French possessions in Africa, 25, of 10,251 tons; for Germany, 888, of 1,643,838 tons; for German possessions, 3, of 453 tons; for England, 2,195, of 4,122,619 tons; for Scotland, 312, of 513,257 tons; for Ireland, 286, of 357,986 tons; for Gibraltar, 28, of 38,682 tons; for Nova Scotia, New Brunswick, and Prince Edward Island, 4,998, of 1,110,452 tons; for Quebec, Ontario, Manitoba, and the Northwest Territory, 14,417, of 2,868,564 tons; for British Columbia, 1,727, of 1,388,702 tons; for Newfoundland and Labrador, 154, of 30,954 tons; for British Honduras, 25, of 12,773 tons; for the British West Indies, 1,066, of 432,594 tons; for British Guiana, 116, of 51,507 tons; for the British East Indies, 60, of 104,312 tons; for Hong-Kong, 55, of 113,353 tons; for Australia, 178, of 194,474 tons; for New Zealand and Tasmania, 25, of 15,908 tons; for the Cape of Good Hope, 57, of 27,766 tons; for British possessions on the west coast of Africa, 20, of 7,129 tons; for other British possessions, 10, of 4,013 tons; for Greece, 3, of 4,174 tons; for Hayti, 249, of 139,028 tons; for the Hawaiian Islands, 187, of 119,847 tons; for continental Italy, 160, of 157,602 tons; for the islands of Italy, 41, of 27,764 tons; for Japan, 62, of 103,588 tons; for Liberia, 4, of 1,358 tons; for Mexico on the Gulf, 282, of 164,889 tons; for Mexico on the Pacific, 204, of 63,623 tons; for the Netherlands, 240, of 369,520 tons; for the Dutch West Indies, 24, of 8,282 tons; for Dutch Guiana, 12, of 4,941 tons; for the Dutch East Indies, 52, of 58,371 tons; for Peru, 27, of 21,768 tons; for Portugal, 126, of 93,512 tons; for the Azores, Madeira, and Cape Verde Islands, 36, of 15,274 tons; for Portuguese possessions in Africa, 3, of 1,828 tons; for Russia on the Baltic and the White Sea, 60, of 51,836 tons; for Russia on the Black Sea, 4, of 2,997 tons; for Asiatic Russia, 9, of 2,155 tons; for Santo Domingo, 65, of 30,177 tons; for Spanish ports on the Atlantic, 84, of 60,265 tons; for Spain on the Mediterranean, 153, of 135,034 tons;

for Cuba, 1,229, of 859,957 tons; for Puerto Rico, 108, of 49,662 tons; for the Philippine Islands, 4, of 4,307 tons; for the Canary Islands, 21, of 6,928 tons; for other Spanish possessions, 2, of 176 tons; for Sweden and Norway, 69, of 51,954 tons; for Turkey in Europe and Asia, 2, of 1,284 tons; for Turkey in Africa, 9, of 5,659 tons; for Uruguay, 57, of 34,909 tons; for Venezuela, 72, of 81,136 tons; for all other countries, ports, and islands, 19, of 7,636 tons; for the whale fisheries, 21, of 3,239 tons.

American Shipping.—In 1858 over 73 per cent. of the exports and imports was carried in American bottoms, and in 1861 the sea-going tonnage in the foreign trade reached 2,642,628, the highest point in the history of the country. During the four years of the civil war the tonnage was reduced to 1,602,583, and since then, owing to the removal of early discriminations in favor of American shipping and the stimulation of iron ship-building by other governments, it has further declined, until in 1891 less than 13 per cent. of the maritime commerce was done by American ships. The registered tonnage in 1891 was 1,005,950, the number of vessels being 1,587, comprising 988,719 tons in the foreign-going ocean trade and 17,231 tons in the whale fishery. Of the commercial tonnage, 236,070 tons were steam vessels and 752,649 were sailing vessels. The enrolled and licensed tonnage comprised 3,609,876 tons documented under Federal laws as engaged in the coastwise trade on the oceans, lakes, and rivers, and 68,933 tons licensed for the fisheries, the total number of vessels being 22,312, of 3,078,809 tons. These make with the registered vessels a total number of 23,890, and a total documented tonnage of 4,684,959 tons. There is an enormous undocumented tonnage, consisting of unrigged barges, flat boats, canal boats, etc., that on the Ohio and its tributaries above Cincinnati, amounting alone to 2,470,547 tons. Of the total documented tonnage, 2,016,264 tons were steam vessels and 2,668,495 sailing or other craft. The documented tonnage on the Northern lakes at the close of the fiscal year 1891 was 1,154,870 tons; on the Western rivers, 308,348 tons; on the Atlantic and Gulf coasts, 2,780,683 tons; on the Pacific coast, 440,858 tons. The documented iron tonnage, including that on the Western rivers, was 741,598 tons. That on the sea-coasts was 554,963 tons, and on the lakes 281,724 tons.

The registered tonnage during 1891 received a net increase of 59,254 tons, and the enrolled and licensed tonnage was increased by 201,007. The documented sailing tonnage increased 62,924 tons, and the steam tonnage 157,175 tons. The number of new vessels built and documented during the year ending June 30, 1891, was 1,384, of 360,302 tons, of which 733, of 144,290 tons, were sailing vessels; 488, of 185,037 tons, were steam vessels; and 163, of 89,975 tons, were barges and canal boats. There were 944 new vessels, of 218,392 tons, built during the year on the Atlantic and Gulf coasts, as compared with 663, of 156,756 tons, in 1890; on the Pacific coast, 122 vessels, of 19,070 tons, as compared with 93, of 12,335 tons; on the Northern lakes, 204, of 111,856 tons, as compared with 191, of 108,526 tons; on the Western rivers, 114, of 19,984 tons, as compared with 104, of 16,506

tons. The iron vessels built during the year measured 105,618 tons, of which 57,989 tons represent vessels built at the lake ports.

CONGO FREE STATE, an independent state in Central Africa, constituted by the general act of the Congo, signed at Berlin on Feb. 26, 1885, which defines the limits of the territory and declares it to be neutral under an international guarantee. The Congo was declared to be an international and neutral river free to the commercial flags of all nations, and police jurisdiction over the stream was confided to an international commission, which was empowered to levy tolls and navigation dues sufficient to defray the expenses. These commissioners were to be appointed by the powers, but only a minority of them named their commissioners, and the commission has never been constituted, its functions being discharged by the officers of the Free State. Leopold II, King of the Belgians, was authorized by the Belgian Parliament in 1885 to assume the title and dignity of Sovereign of the Congo State. The supreme Government, which is composed of the King and heads of departments, has its seat at Brussels. Freedom of trade, which was decreed for the whole basin of the Congo in the original act, the powers reserving for themselves the right of deciding after twenty years whether free entry should be continued, was modified by the International Anti-Slavery Congress at Brussels in 1890. By the act then signed and afterward ratified by all the treaty powers, with the exception of France, Holland, Portugal, and the United States, the Free State was enabled, in order that it might co-operate efficiently in the suppression of the slave trade, to levy certain duties on imports. The Government of the Netherlands was the only one to object to this clause. On Aug. 2, 1889, King Leopold executed a will by which he bequeathed to Belgium all his sovereign rights in the Congo Free State; and on July 3, 1890, the Free State and Belgium entered into a convention by which the former conceded to the latter the right after the lapse of ten years to annex its territories, which on July 31 of the same year were declared inalienable, although a prior convention had given to France a pre-emption claim next to that of Belgium.

The officials employed in the general administration at Boma and in the other districts number 69. The 12 administrative districts are Boma, Banana, Matadi, the Congo Cataracts, Stanley Pool, Kassai, the Equator, Ubangi, the Aruwimi and Welle, Stanley Falls, Lualaba, and East Kwango. The authority of the State is recognized wherever there are missions and factories, and has recently been defied only in the Bolobo country, where it was considered necessary to make an example of the rebellious natives, and in Lukungu, where an agent of the State was killed. The general administration in Africa is directed by a governor-general. The post for a year or two has been vacant, the chief administrative officer being Vice-Governor-General Coquilhat. A judiciary has been organized and a criminal code has been in operation since 1886. For civil and commercial affairs the Belgian law is in force, with certain modifications. The natives are beginning to take their quarrels into the courts for adjudication.

Area and Population.—The area of the Congo State is estimated at 2,091,000 square kilometres, or 804,230 square miles. Estimates of population vary from 12,000,000 to 40,000,000. The number of Europeans in 1885 was 254, of whom 46 were Belgians. At the close of 1889 there were 420, of whom 175 were Belgians; and on Dec. 31, 1890, the number was 744, of whom 338 were Belgians. The mortality among Europeans has declined from 7.08 per cent. in 1886 to 4.80 per cent. in 1890, a result that is ascribed to hygienic progress and experience.

Commerce.—The general export trade in 1887 was valued at 7,667,969 francs; in 1888, at 7,392,348 francs; in 1889, at 8,572,519 francs. In 1890 it leaped to 22,351,980 francs. The special exports, consisting of the produce of the Congo State only, increased from 1,980,441 francs in 1887 to 2,609,300 francs in 1888, and 4,297,544 francs in 1889, and in 1890 to 8,244,199 francs. Special imports in 1890 were valued at 12,720,000 francs. The principal articles in the general export returns for 1889, which include merchandise brought down from regions outside the limits of the State, were ivory of the value of 2,528,000 francs; caoutchouc, 2,137,000 francs; palm kernels, 1,039,000 francs; coffee, 1,169,000 francs; palm oil, 982,000 francs; gum copal, 149,000 francs; ground-nuts, 142,000 francs. In 1889 944 vessels, of 208,246 tons, called at the ports of Banana and Boma.

The Congo is navigable for a distance of 450 miles from its mouth to Vivi. Above that point, for a distance of upward of 200 miles, navigation is interrupted by rapids up to Stanley Pool, beyond which the main stream is navigable as far as Stanley Falls, a distance of 1,000 miles, and many of the tributaries are navigable for long distances. About 7,500 miles of river navigation have already been opened to the steamers of the State and of the missions and commercial houses. The Congo Railroad Company, constituted under Belgian laws with 25,000,000 francs capital, completed in 1888 the surveys for a railroad, 250 miles long, between Matadi, on the lower river, and Leopoldville, on Stanley Pool, the route running parallel with the river at an average distance of 30 miles from the south bank. Construction has been begun, and the road is expected to be open for traffic before the close of 1893.

The Congo State maintains an armed force of eight companies, commanded by European officers, which are stationed at Boma, Lukungu, Leopoldville, on the upper course of the Lukungu, where there are two, one at Bangala, and the other two at the mouth of the Aruwimi, and at Stanley Falls. The total number of soldiers is 2,800, besides whom there is a body of 1,000 native militiamen, and at need all the employés and workmen of the Government can be called upon to serve as an auxiliary corps. Belonging to the Government are four steamers on the lower Congo and eleven on the upper course.

Boundary Questions.—The limits of the Congo Free State were fixed by treaty before the scramble for Africa began and the doctrine of effective occupation was laid down. The colonial projects of England and Germany on the east side of Africa, and of England and Portugal in the south, forced the Congo Government to

make efforts not otherwise necessary in the way of exploring and making treaties at the extremities of the region assigned to it in the Congo act. A dispute with Portugal relating to the inclosed territory of Kabinda was referred to the Swiss Federal Council for arbitration.

In another dispute relating to the Muata Yanvo's Empire of Lunda or Ulunda, the Portuguese Government refused to admit the arbitration of Switzerland. This native kingdom, the largest and most populous in the Congo basin, embraces the greater part of the territory between the Kwango and the Kassai, containing nearly 100,000 square miles, with a population of some 2,000,000, ruled by 300 or more chiefs and kings, who are all vassals of the Muata Yanvo, paying tribute in ivory, skins, corn, cloth, and salt to him and to a queen called the Lukoshesha. The Kalunda import textile goods, iron ware, and copper from the south and southeast, and export ivory and slaves, trading with Arab slave-dealers from the east and with the Portuguese on the west. When the Congo State proposed to establish its power in this region and erect a station called the Eastern Kwango, the Portuguese Government objected, asserting that Lunda was within the limits of its sphere. An arrangement was reached by direct negotiation between the two governments whereby the eighth parallel of south latitude forms the southern boundary of the territory of the Congo State as far as its intersection of the Kassai, beyond which it follows the right bank of that river. This divides Lunda, leaving the greater part to Portugal.

A difficulty seemed likely to arise between the Congo State and Great Britain in relation to the right to another powerful native state in the same part of Africa. Msiri's kingdom of Garengeze or Katanga, occupying the country between the Luapala and the Lualaba, the head streams of the Congo, to the west of Lake Bangweolo and Lake Moero, is an elevated region of mountains and table-lands, one of the few spots in the territory assigned to the Congo State that is suitable for European colonization. This country is known to abound in copper, and is supposed to be very rich in gold and other minerals. When the British South America Company undertook to annex to the British Empire the vast region reaching from the Transvaal to the great lakes, relying chiefly on gold discoveries for repayment of the expense, this promising mineral district offered much better returns than the neighboring territory in Nyassaland to which England made good her title. Although it was plainly included in the limits of the Congo State secured by the general act of the Congo, Joseph Thomson and other British emissaries visited the country in 1890 and 1891 for the purpose of acquiring territorial treaty rights for what they were worth, and, what was of more importance, mineral rights that would render the prior claim of the Congo State of little value and lead to the eventual transfer of the country to Great Britain. British activity compelled the Congo Government to send agents to the same district. A Belgian expedition was sent out in the summer of 1890 to reach Katanga by the Lomami river route. In connection with it, in order to forestall the British South Africa Company, an Anglo-Belgian company was formed, under the pat-

ronage of the King, for working the mines of Katanga and the development of the whole region above Riba Riba, on the Lomami, including Manyema, Urua, and Katanga. The abandonment of the South Africa Company's pretensions to the Portuguese territory north of the Zambesi lessened the immediate danger of a British annexation of this region. The Katanga Company, at least one half of whose shares must be held by Belgians, undertakes within three years to place three steamers on the upper Congo, to establish three or more new stations, and to organize a force of police. The Congo State concedes to the company one third of the public lands in that district, with right to work the minerals for ninety-nine years. Commander Cameron acted for the English promoters, who furnished one third of the capital of 3,000,000 francs. The first expedition, led by M. Delcommune, was followed in 1891 by one equipped by the Katanga Company, the leader of which, Lieut. Lemarinel, induced Msiri, whose refusal to treat a few months before with Mr. Sharpe, the British South Africa Company's agent, had saved the Congo State from a vexatious boundary dispute, to acknowledge the suzerainty of the Free State. Captain Stairs led a well-equipped expedition from the east coast across German territory for the purpose of taking actual possession of the country on behalf of the Anglo-Belgian Katanga Company and the Congo Free State.

Finance and Taxation.—The budget of the Congo State amounts at present to about 4,000,000 francs a year. The King of the Belgians has made great sacrifices to institute and maintain the State, and recently contributions have been made by the Belgian treasury in the shape of a loan of 25,000,000 francs authorized by the Chamber. 5,000,000 francs to be advanced immediately after the passage of the bill on July 3, 1890, and 2,000,000 francs a year for the next ten years, at the end of which Belgium can annex, if she will, the Congo State with all its possessions. At no time has the State been able to pay more than one third of its expenses out of the taxes and imposts collected. The protection and facilities for trade afforded by the Congo Free State have attracted merchants of various nationalities to its dominions and caused a wonderful expansion of the export commerce. The progress thus achieved has entailed a corresponding increase in the expenses of administration and police. The whole cost was sustained by the gratuitous sacrifices of King Leopold until it began to exceed his means, when a partial monopoly of the ivory trade was established and other resources were worked for the benefit of the Government. As the merchants complained of this the ivory monopoly was abandoned on condition that house and land taxes, export duties, and duties on exports should be substituted. These taxes were necessarily high. The costs of the Government were greatly enhanced by the efforts made to suppress the slave trade, which was one of the main objects for which the State was founded. Enemies of the Free State alleged that the officials of the Free State were themselves slave-holders or employers of slave labor. As slavery is the custom of Africa, there is often no other labor to be had, as the English and Germans have discovered in their attempts to exploit the east-

coast region. Whatever abuses are practised by individuals, the system countenanced by the authorities is that followed also in British East Africa, of hiring slaves for fixed terms from their masters and allowing them wages, to be applied to buying their freedom. Slave raids are checked wherever the authority of the Congo State is exercised, at one time as far east as Stanley Falls. After that station was abandoned the co-operation of Tippoo Tib was secured at the time of the Stanley expedition for Emin Pasha's relief. More recently Lieut. Deschamps, meeting a band of 7,000 slaves on the River Sankuru, put them to flight with 200 trained native soldiers and released 1,000 slaves. The ultimate results of Emin's rule in the equatorial provinces and of Stanley's expedition for his relief depend on future developments. Egypt still asserts her claim, England tacitly includes it in her sphere of activity, Germany by the aid of accomplished facts may establish a right, and Belgium has aspirations based upon its co-operation in the Stanley expedition. Activity in the northeastern part of the Free State's territory, where so many rivals were seeking to extend their influence, was a matter of necessity. On the western side of the continent the fourth parallel of north latitude was fixed as the northern boundary of the Congo State by agreement with France. The region of the Welle, which is the upper course of the Mobangi, may be claimed as Hinterland by either the French, the Germans, or the Congo State. North of that river, in 5° of north latitude, Capt. van Gele in 1890 made a treaty with the powerful chief Bangasso, who rules on the northern bank of the Mbumo tributary of the Mobangi. A subsequent expedition, consisting of 300 soldiers and 8 European officers, with 5,000 carriers, was dispatched under Capt. van Kerkhoven, whose object was to ascend the banks of the Welle, and penetrate beyond its source into the Nile basin and, if possible, to reach the Bahr-el-Gazelle or Lado, on the White Nile. This considerable force got under way in March, 1891. In the early summer an Arab slave convoy was defeated between the Aruwimi and the Welle, and 2,000 slaves were set free. Capt. Ponthies led an expedition to the upper Himbiri Roubi, with the object of proceeding thence to the northward, erecting a line of fortified camps as a bulwark against Arab slave raiders. He had several encounters with parties of these that he met.

The cost of these distant expeditions, the necessity under which the Free State was placed of engaging in the scramble for Africa, and the concomitant work of suppressing the slave trade, together with the growing expense of protecting commerce, placed the State in a difficult financial position. When an export tax of 10 per cent. was levied on ivory from the banks of the Congo, of 25 per cent. on ivory from elsewhere, and of 10 per cent. on rubber, in addition to heavy taxes on houses and building land, and a duty of from 10 to 30 francs for every servant, the Dutch merchants who had settled on the Belgian bank of the Congo threatened to go over to the Portuguese bank to escape a portion of the taxation. To relieve the State and enable it to fulfill its international obligations, the powers at the Brussels conference authorized it

to impose certain import duties for a limited term of years. Under the terms of the act the sale of spirits was forbidden where their use has not yet been introduced—that is, beyond the Inkissi river and in the whole of the upper Congo district. The Congo State desired also to place heavy restrictions on the importation of fire-arms and ammunition, and to discourage the sale of spirits in the zone where the Brussels conference had placed no interdiction. To this end high license duties were imposed in 1890, which were repealed, however, the abolition of licenses to take effect on Jan. 1, 1892, because Portugal had not supported this action with a similar measure. Personal effects and agricultural and industrial implements were still to be admitted free, and the duties on other articles were not high, but they would be sufficient to allow the more burdensome of the existing taxes to be lightened and would relieve King Leopold of a part of his contributions, although he expected still to have from one third to one half of the cost of administration to pay. The ratifications of the Brussels act were to be exchanged on July 2. After a full discussion of the import and export duties in the French Chamber, the proposed scheme failed to receive the assent of that body, and the French Government obtained an extension of the term allowed for ratification, which most of the powers had given in due time. The United States Government, being unable to act before the meeting of the Senate, likewise obtained an extension. The French Chamber finally ratified the convention on obtaining a modification of the ivory duty. From Feb. 9, 1891, the duty on ivory was fixed at the rates established—that is, 10 and 25 per cent. *ad valorem*, and that on rubber at 10 per cent.—and the direct and personal taxation was lowered to one third of the former rates. This was in pursuance of a protocol signed by France, Portugal, and the Congo State, by which they arranged between themselves to impose a duty of 10 per cent. on salt, fire-arms, and ammunition imported on the west coast of Africa, and of 6 per cent. on other merchandise. The United States also signed a separate agreement admitting the establishment of import duties. As soon as ratifications were exchanged between the other signatories of the antislavery declaration and act of the Brussels conference, the Congo Government fixed a tariff to go into force on Sept. 1. French merchants resisted the imposition of different duties on ivory so effectually that the King's representatives agreed to abolish the separate tariff zones and levy a uniform 10-per-cent. duty. The other tariffs were the same that had been agreed upon between the three powers having possessions on the west coast in the Congo region.

CONGREGATIONALISTS. I. Congregationalists in the United States.—The following is a summary of the statistics of the Congregational churches in the United States as they are given in the "Congregational Year-Book" for 1891: Number of churches, 4,817; of ministers, 4,619; of members, 506,832; of families, 341,043; of additions during the year by confession of faith, 27,592; of baptisms, 1,255 of adults and 9,892 of infants; of members of Sunday schools, 645,976; of Young People's Societies of Christian Endeavor, 2,540, with 122,204

members. Amount of benevolent contributions, so far as reported from 4,042 churches: for foreign missions, \$349,733; for education, \$233,412; for church building, \$169,513; for home missions, \$468,042; for the American Missionary Association, \$163,795; for Sunday schools, \$50,733; for the New West Education Society, \$43,314; for minister's aid, \$19,173; other contributions, \$772,446; for home expenditures (4,094 churches), \$6,091,221. Of the churches, 3,468 are recorded as "supplied" and 1,349 as vacant or supplied by licentiates. Of the ministers, 3,062 are in pastoral work and 1,537 are without charge.

The seven theological seminaries return 46 professors, 35 instructors or lecturers, 9 resident licentiates or fellows, 33 members of advanced or graduate classes, and 549 undergraduate students.

The Congregational Sunday-school and Publishing Society, Chicago, received, during 1890, \$57,748, and expended \$57,841.

The New West Education Commission reported in 1890, 32 schools in Utah and New Mexico, with 75 teachers, 3,284 pupils, of whom 967 were Mormons and 212 were Mexicans, and 1,900 pupils in Sunday schools. Its income for the year had been \$75,301 and its expenditures \$79,629, and it was indebted, on account of buildings, \$9,328.

The library of the American Congregational Association, Boston, contains 29,403 volumes, 55,960 pamphlets, and 34,086 unbound numbers of periodicals.

American Congregational Union.—The thirty-eighth annual meeting of the American Congregational Union was held in New York city, Jan. 8. The Rev. William M. Taylor, D. D., LL. D., presided. The receipts of the society during the year had been \$155,580, \$18,724 having been received for parsonages. One hundred and twenty-eight churches had been aided with \$117,546, whereby \$465,663 worth of property was brought into service; while the payment of \$16,470 to build 47 parsonages had brought property to the value of \$51,769 into use. The total amount of receipts since the first institution of the Albany fund in 1852 and of the Forefathers' fund in 1856, and including those funds, had been \$2,041,623, of which \$109,527 had been received for the building of parsonages since 1882. The Union had since 1864 loaned \$194,284 to 212 churches, of which \$65,840 had been refunded, while some had made contributions more than equivalent to the grants they had received. The loan accounts of 53 of these churches had been closed. In the department of parsonage loans, \$90,938 in all had been loaned to 270 churches, 51 of which had paid up.

American Home Missionary Society.—The sixty-ninth annual meeting of the American Home Missionary Society was held in Saratoga Springs, N. Y., June 2. The executive committee reported that \$460,999 had been received during the year from legacies and contributions, and \$174,181 had been reported by the auxiliaries as received and expended in their respective fields; the expenditures had been \$802,566, and had been met by the current receipts, balances, and loan from bank. Nineteen hundred and twelve missionaries had been employed in 45 States and

Territories, serving 3,270 congregations and missionary districts, of whom 5 had been commissioned to congregations of colored people, and 191 had preached in foreign languages, namely: 10 to Welsh congregations, 38 to German, 102 to Scandinavian, 24 to Bohemian, 3 to Polish, 2 to Indians, 8 to French, 3 to Mexicans, and 1 to Italians. Two hundred and ninety-two new Sunday schools had been organized during the year; and the whole number of Sunday schools under the special care of the missionaries was 2,395, in which were 154,723 pupils. The additions on confession of faith numbered 7,244. Two hundred and twelve churches had been organized, and 56 mission churches had become self-supporting; 171 houses of worship had been completed, and 25 were in course of erection; 12 chapels had been built, and 72 parsonages provided; and 145 men connected with the mission churches were preparing for the ministry. The women's auxiliary societies had contributed \$41,553 to the treasury of the society. Besides the receipt and expenditure of money, the society had distributed \$66,964 worth of supplies to missionaries in the field. A new constitution, prepared and recommended by the executive committee, was amended and adopted. Resolutions were adopted emphasizing the importance of mission work in cities, in view of the fact that the frontier was rapidly moving "from Minnesota to Massachusetts"; advising the establishment of a woman's society in every church; urging that Christian Endeavor Societies and Sunday schools be trained to bear their part in aid of evangelization; and requesting the commissioners thereof to close the doors of the Columbian Exhibition on Sunday.

American Board.—The eighty-first annual meeting of the American Board of Commissioners for Foreign Missions was held in Pittsfield, Mass., Oct. 13. The total receipts of the society for the year had been \$824,812, while the direct expenditures in the mission fields had been \$767,439. Of the receipts, \$484,463, or \$66,542 more than in the preceding year, had been derived from donations, \$184,844 from the three Woman's Boards, and \$206,458 from legacies; the advance in the contributions through the Woman's Boards having been \$15,638, and in the amount received from legacies \$6,656 over those of the preceding year. Of the Swett bequest, \$42,000 had been spent to meet special calls in Japan and China; of the Otis bequest for new missions, \$80,908 had been spent in Africa, China, Japan, and Mexico.

The following is the general summary of the reports from the missions: Number of missions, 21; of stations, 97; of out-stations, 1,136; places for stated preaching, 1,287; average congregations, 70,329; number of ordained missionaries (11 being physicians), 182; whole number of laborers sent from this country, 538; number of native pastors, 204; total of native laborers, 2,648; total of American and native laborers, 3,186; number of churches, 410; of church members, 38,226; added during the year, 3,554; whole number from the first, as nearly as can be learned, 118,507; number of theological seminaries and station classes, 20; of colleges and high schools, 62; number of boarding schools for girls, 54; of common schools, 980; of pupils in common

schools, 37,750; whole number under instruction, 46,403; amount of native contributions, so far as reported, \$114,537.

The board was in control of permanent funds to the amount of \$372,655. A committee was appointed at the meeting to obtain increased subscriptions to the missionary funds to the amount of \$100,000, and \$50,000 were pledged to that purpose before adjournment. A committee was appointed to urge upon the Government the claims of the mission churches in certain of the Pacific islands for restitution for outrages committed against them by the Spanish authorities. A resolution was adopted favoring the closing of the Columbian Exhibition at Chicago on Sunday. A letter was received from the president of the board, the Rev. R. S. Storrs, D. D., expressing his desire not to be continued longer in that office. He said that he had served in it for four years in obedience to the successive commands of the board, but it now seemed to him that it was his clear right to ask to be relieved from the duties of the office. The year just closing had been "one of uninterrupted harmony in the councils of the board and of its Prudential Committee; of the largest contributions ever made to its treasury in the customary annual donations and legacies; of inspiring progress in its foreign work. So far as I can see, no threatening cloud appears in its sky. The progress steadily made in recent years along definite and accepted lines of administration offers, in my judgment, a sure guarantee of future prosperity. It is therefore a fitting time for me to ask, and for you to consent, to have another name substituted for mine in connection with the public leadership of this great institution." Dr. Storrs was, nevertheless, unanimously re-elected, and accepted the result as representing the cordial feeling of the whole board that he had been entirely fair, candid, and courteous in his treatment of its members. The other officers of the board were re-elected.

American Missionary Association.—The forty-fifth annual meeting of the American Missionary Association was held in Cleveland, Ohio, beginning Oct. 22. The executive committee reported that the total receipts of the society for the year had been \$430,974 and the expenditures \$430,355, in addition to which an income had been received from the Daniel Hand fund of \$53,534. The extended and increasing work accomplished by this fund had benefited thousands of the needy people for whom it was given, and was opening new channels of usefulness to those who in their turn were thus enabled to elevate their race. The year had been one of general religious interest, and had been remarkable in the thoroughness of the educational work that had been done. The churches, though among the poor, had raised \$28,853 toward their own support, and had contributed \$3,465 to missionary purposes. The educational work in the South included 6 chartered institutions, 23 normal and graded schools, and 51 common schools—80 schools in all—with 373 instructors and 13,845 pupils. A new school had been undertaken at Cappahosic, Va., and a large educational institution was beginning at Orange Park, Fla. The "mountain work" was growing more rapidly than means were afforded for its sup-

port, so that while enlarged in some directions it had been necessary to contract it in others. It was represented in an educational aspect by the academy at Williamsburg, Ky., and schools at Blowing Rock and the Saluda Seminary in North Carolina. Among the Indians there were 9 churches, with 96 members, 85 missionaries and teachers, 887 pupils, and 1,344 in Sunday schools. The missionaries in Alaska were in charge of a school of 300 pupils. The Normal Training School at Santee had in twenty-one years furnished instruction to nearly a thousand persons. The work among the Chinese included 17 schools, 37 missionaries, and 1,054 pupils. A historical sketch of the association was read by Secretary Strieby, who showed that it originated in 1846 by the co-operation of a number of small organizations which were endeavoring to carry on a missionary work free from all connection with churches in which slaveholding was tolerated. It had, however, never been in affiliation with that party of the anti-slavery men who denounced the Church and the Constitution of the United States. A committee appointed at the preceding meeting to consult with the executive officers respecting the increasing needs of the association and the adaptation of its present methods to the enlarged conditions of its work presented a report, which was adopted. It recommended the adoption of a policy looking forward to the endowment of the educational institutions and to leading them up to self-dependence; efforts to extend the influence of Congregationalism, and awaken an enthusiasm for self-government and self-support; and the recognition of the right in the missionaries of immediate appeal to the executive committee, and of their unabridged freedom to correspond with co-operating and auxiliary societies.

II. Congregationalists in British North America.—In the Dominion of Canada and the island of Newfoundland there are two Congregational Unions—those of Ontario and Quebec and of Nova Scotia and New Brunswick. They return together 128 churches, 69 preaching stations, 95 ministers, and 10,689 members. The Congregational Union of Ontario and Quebec reported at its meeting in Guelph, June 10, 63 pastors in office, 117 preaching stations on the Lord's day, an average attendance on religious services of 16,593, a total of 25,896 persons under pastoral care, 9,079 members, 104 Sunday schools, with 1,175 officers and teachers and 9,783 pupils on the rolls, 653 baptisms during the year of adults and 62 of infants, 805 persons admitted during the year on profession, 105 church edifices valued at \$740,700 and providing 33,039 sittings, and 29 parsonages valued at \$43,950. Amount raised for all purposes, \$142,603, of which \$2,713 were for foreign missions. The Rev. Hugh Pedley, of Manitoba, presided at the meeting of the union. In reply to memorials from the Knights of Labor, the Single Tax Association, and other societies, the body expressed its sympathy "with every effort that harmonizes with Christian principle in the uplifting of the suffering poor," and its willingness "to co-operate with them in any direction not inconsistent with the teaching of Jesus Christ, believing that with the growth of true religion there will be also the sure progress of

the people." Another resolution urged legislative representatives to stand firm in demanding that Parliament enact a bill for immediate prohibition of the liquor traffic unassociated with other issues.

The Congregational Union of Nova Scotia and New Brunswick reported 22 churches, 12 ministers, 1,078 members, 3,604 persons under pastoral care, with an average attendance on worship of 2,190, 25 Sunday schools with 147 teachers and 1,061 registered pupils, 21 persons admitted during the year on profession, 18 adults and 37 infants baptized, 23 church buildings valued at \$65,100, and 11 parsonages valued at \$15,900. Amount of benevolent contributions estimated at \$10,939. The Union met at Kingsport, Nova Scotia, July 10. The Rev. J. W. Cox was elected chairman for the year. Resolutions were passed approving the Young People's Societies of Christian Endeavor, and advising ministers and members of churches to co-operate with the friends of prohibition to procure legal enactment thereof with provision for enforcement.

The Canada Congregational Missionary Society is in its fifty-second year. It received during the year ending in June, 1891, \$10,274, and returned four trust funds amounting to \$33,090. It sustains home missions at many points in the provinces of British Columbia, Manitoba, Ontario, and Nova Scotia.

The Canadian Congregational Foreign Missionary Society, which completed its tenth year at its anniversary in June, had received during the year \$2,557. It sustained three missionaries in the Portuguese province of Angola, West Central Africa, who are laboring in co-operation with the American Board. The Woman's Board received \$1,829, \$1,200 of which were for foreign work. The Woman's Missionary Society of Nova Scotia and New Brunswick, which co-operates with the Canada Congregational Missionary Society, received in 1890-'91 \$329. The Newfoundland Congregational Home Missionary Society co-operates with the Colonial Missionary Society in sustaining missionary churches at four of the outposts.

The Congregational Provident Fund Society returned assets of \$14,589 in its Widows' and Orphans' branch. It received \$1,157, and paid to annuitants \$780. On the Retiring Ministers' account, its assets were \$5,843, and its receipts and disbursements had been \$1,315. The Congregational Publishing Company publishes a weekly journal and a year-book, and manages a Sunday school and book room.

III. British Congregationalists.—The whole number of churches, branch churches, and missions in Great Britain, Ireland, and the islands of the British seas (not including mission stations in Scotland and Ireland, but including the churches of the Evangelical Union of Scotland), is given in the reports for 1891 as 4,821 against 4,817 in 1890. The Congregational Union of England and Wales returns a total seating capacity in its 4,589 churches and mission stations for 1,647,500 persons. The Congregational Union of Scotland returns 97 churches and 104 ministers, 16 of whom are without pastoral charge; that of Ireland, 29 churches, 29 ministers, of whom 3 are without charge; and 95 preaching stations, at which the

ministers are assisted by 46 lay preachers; and the Congregational Union of the Channel Islands, 9 churches, 2 branch churches, and 5 ministers in charge.

About 400 churches in Sweden and Norway, with a membership of 100,000, are formed on the Congregational model. There are also Congregational churches in France, Russia, Germany, Spain, and Belgium. With the McAll mission are connected 129 stations in Paris and different cities and towns of France, Algeria, and Corsica, which are assisted by contributions from Great Britain, the United States, and Canada.

In Australia and New Zealand are 7 Congregational Unions, 173 churches, 156 pastors, and 59 resident ministers without pastoral charge.

Fifty-seven Congregational churches, with 7,000 members, are returned in the Sandwich Islands. The Theological Institute at Honolulu educates ministers for both the home and the foreign field.

London Missionary Society.—The ninety-seventh annual meeting of the London Missionary Society was held in London, May 13. The report embodied a review of the last ten years of the work of the society, from which it appears that the income in 1881 was £108,247; in 1891, £114,293. It reached the highest point, £125,250, in 1889. In 1888 it was £124,860, and in 1890, £121,455. The society was now in debt £12,597. The number of missionary agents was 44 higher than in 1881. In ten years 139 new missionaries had been sent out, and 95 names had dropped, 27 of them by death. There were now 12 more ordained missionaries than in 1881, but 10 fewer than in 1871.

The Ladies' Association (missionary) had received £7,276, or £582 more than in 1890, and employed 39 women as agents, against 36 in 1890.

Congregational Union.—The annual meeting of the Congregational Union of England and Wales was held in London, beginning May 10. The Rev. Dr. Herber Evans was elected chairman. Notice was taken of the report of the death of the secretary of the Union, the Rev. Dr. Hannay, and the progress of the effort to erect a suitable memorial of him. The arrangements had been made for the International Congregational Council, to be held in July, and the prospect was good for a satisfactory meeting. The publication department had had a prosperous year. The receipts of the Union had been £10,751, and a credit balance of £602 was returned. In view of the necessity of choosing a new secretary, a special report on the nature and duties of the office was presented by a sub-committee of the General Committee. It gave rise to discussion in which the opinion seemed to prevail that great deliberation should be exercised in the choice of a permanent secretary, and fuller consideration should be given to the duties and responsibilities of the office; after which a resolution was unanimously adopted, affirming the principle that any person appointed secretary of the Union should be a minister holding a leading position in the churches, and referring all matters relating to the duties of that office to a special committee which should report, with a recommendation, at a special business meeting to be convened at the next au-

tumnal session of the Union. The assembly, while expressing gratification at the introduction of the bill for providing free education in public elementary schools, urged that the grant for the purpose should appear on the annual estimates, and that increased grants of public money to denominational schools should be conditional on their being subjected to the control of managers appointed by the public; and that there should also be unsectarian schools, managed by school boards, within reach of the children of every locality. A council of secondary education was provided for, whose duty it shall be to attempt to secure the recognition and operation of the principle of religious equality in all the public schools and throughout all departments of the secondary and higher education; to endeavor to secure the liberal and impartial administration of the local grammar schools, and aid in the creation of a public spirit favorable to their free government and efficient management; to promote the organization, equipment, and standard of attainment of non-conformist schools; and to seek the co-operation of the representatives of other free churches in carrying out its objects. The special committee appointed at the annual meeting of 1890 to consider what measures might be taken by the churches to increase their power in dealing with prevalent religious indifference reported, recommending the appointment of a special social questions committee, the principal function of which should be to give information, advice, and other assistance in furtherance of upward social movements. Regarding the measures pending in Parliament concerning marriages in non-conformist places of worship as inadequate for their intended purposes, the meeting expressed the opinion that a public inquiry into the operation of the present marriage laws should precede further attempts at legislation, and that early steps should be taken for obtaining information and eliciting non-conformist opinion on the subject. The assembly thankfully recognized the resolution of the House of Commons condemning the opium-licensing system in India as morally indefensible, and urged that the license be abolished, except as to the legitimate demand for medical purposes.

The autumnal meeting of the Union was held at Southport, beginning Oct. 12. The most important business concerned the election of a secretary to succeed the Rev. Dr. Alexander Hannay, deceased, in connection with which the committee appointed for the purpose in May presented a paper on the nature and duties of the office. The paper declared that the secretary of the Union should clearly recognize that Congregationalism is truly Catholic; that he should have a perception of the natural unity of all the denominational interests, and, without forcing anything, should carefully and wisely inquire how far they can be legitimately consolidated; that he should have faith in the elasticity and progressiveness of Congregationalism, and should always regard the revision of the Constitution of the Union as a possible contingency; that he should be in sympathy with all the churches, should give his whole time to the Union and be paid correspondingly; and that he should be

interested in public questions affecting the welfare of the community, such as those of religious equality, temperance, education, peace, and social reforms generally. The report was adopted, and the Rev. Dr. Alexander Mackennal was chosen Secretary. He subsequently declined to accept the office. A resolution was adopted, to be forwarded to representative bodies of other free churches, inviting a congress of free churches, with a view to the cultivation of closer relations between them. It assumed that those churches had not only common principles to maintain and common interests to guard, but they had a common work to do, which was seriously hampered by the want of a better understanding among themselves. There was a wide-spread and growing conviction that sectarian competition was a disaster to all parties engaged in it, and a grievous dishonor to the Lord. Despite the differences in the extent and grounds of their non-conformity, it was increasingly felt that the various free churches were united by spiritual affinities and interests which were deeper and stronger than any theological or ecclesiastical diversities. The assembly was of the opinion that it was desirable that opportunity should be afforded for the development and manifestation of this essential unity.

International Congregational Council.—The International Congregational Council met in London, July 13. This was the first time that representatives of the Congregational or Independent churches from all quarters of the earth had met in a general conference since their origin. The preliminary steps taken by the Congregational bodies of Great Britain and America to the assembling of the Council are related in the volumes of the "Annual Cyclopædia" for 1889 and 1890. The Council was composed of 300 delegates, of whom 100 were from Great Britain, 100 from America, and 100 from Wales, Scotland, Ireland, the colonies, and other countries. Previous to the opening of the meeting a breakfast was given to the delegates by the committee of the Liberation Society. The Rev. Robert W. Dale, D. D., of England, presided over the sessions. The address of welcome to the delegates was made by the Rev. John Brown, D. D., late chairman of the Congregational Union of England and Wales. The proceedings of the Council consisted in the reading of papers and discussions of subjects concerning the religious life and the aspects and relations of Congregationalism. The opening sermon was preached by the Rev. E. P. Goodwin, D. D., of Chicago. The president's address was on "The Divine Life in Man." The first subject to be discussed was "Domestic Congregationalism; the Importance in the Churches of the Congregational Idea of the Church; Pastoral Oversight and Actual Guidance by Church Officers of Members in their Work"; under which the papers were on "The Obligation of Personal Service in Christian Work," by the Rev. H. Arnold Thomas, of Bristol; "The Service of the Young," by the Rev. Dr. Dunning, of Boston, Mass.; "Guilds," by Robert F. Horton, of Hampstead; and "The Society of Christian Endeavor," by Mr. Nehemiah Boynton, of Boston, Mass. The "Present Direction of Theological Thought in Congregational Churches" was described by President Simon, of Edinburgh, for

Great Britain; Prof. L. F. Stearns, of Bangor, Me., for America; and the Rev. Evan Jenkins, for Wales. On "The Economy of Congregationalism," the Rev. Dr. A. H. Quint spoke of "The Place of American Congregational Councils"; the Rev. A. H. Bradford, of Montclair, N. J., on "Doctrinal Conditions of Church Membership"; the Rev. A. H. Ross, D. D., of Michigan, on the "Effective Organization of Congregationalism"; the Rev. Thomas Greene, of Ashton-under-Lyne, on "Doctrinal Schedules in Trust Deeds"; and the Rev. William H. Moore, of Hartford, Conn., on "Church Statistics." "The Place of Congregationalism in the Making of Great Britain, of New England and the United States, and of the British Colonies" was considered by the Rev. J. Guinness Rogers, of London, the Rev. B. M. Fullerton, of Waltham, Mass., and the Rev. Dr. Jefferis, of Australia. The subject of the third day's discussions was "Congregationalism in its Relations to the Nation." The papers were on "Home Missions," by the Rev. Dr. J. H. McLean, of California; "The Method of meeting the Wants of Growing Towns, the Needs of Scattered Populations, and Decaying Districts," by the Rev. W. F. Clarkson, of London, and the Rev. Hugh Pedley, of Manitoba; "The Attitude of the Churches toward Aggressive Agencies Outside of and Independent of the Churches," by the Rev. Alfred Rowland, of London; "Congregationalism as affected by the Relations between Church and State" in the United States, by President Cyrus Northrup; in England, by the Rev. Dr. Albert Goodrich; in Wales, by the Rev. Dr. Herber Evans; and in Australia, by the Rev. Dr. L. I. D. Bevan. In a conference on "The Churches and Social Ethics," "The Attitude of the Church to the Social Movements of the Time" was presented by the Rev. George Gladstone, of Glasgow; "The Relations of Labor and Capital," by Dr. W. Gladden, of the United States, and Mr. Ben. Tillet, of England; "The Land in its Relations to National Prosperity," by Mr. Albert Spicer; and "Laws respecting the Sale of Spirituous Liquors," by the Rev. Dr. Richard Cordley, of Kansas. The question "What have the Churches gained and lost in Spiritual Influence?" was discussed in the divisions; "Through Changes that have taken place in Doctrinal Beliefs," by the Rev. Dr. E. R. Conder, of London; "Through Changes in the Type of Social Piety," by the Rev. W. Hewgill, of Farnworth, England; and "What is lost through the Defective Realization of the Ideal of the Church," by the Rev. G. S. Barrett, of Norwich. An extemporaneous discussion followed the reading of these papers. In a conference on "The Training of Ministers," Prof. Fisk, of Chicago, described the method of the American seminaries, and Prof. Vaughan Price, of New College, the English system. The "Federation of English-speaking Peoples for International Arbitration, Universal Peace, and Furtherance of National Righteousness" was discussed by the Rev. F. Herbert Stead and the Rev. Dr. F. Newman Hall, of England, and Ex-Senator J. W. Patterson, of New Hampshire. Concerning "Congregationalism and the Church Catholic," papers were presented by the Rev. Drs. Allon, of London, and W. M. Taylor, of New York, the Rev. James Stark, of Aberdeen, the Rev. S. B. Hand-

ley, of Stafford, and voluntary speakers. "The Lord's Day in its Relation to the Churches" was the subject of a paper by the Rev. Dr. Arthur Little, of Dorchester, Mass.; "Sacerdotalism and Modern Unbelief," that of one by the Rev. Dr. James Brand, of Oberlin, Ohio; and "Congregationalism and the Church Catholic," of one by the Rev. Dr. Fairbairn, of Oxford. On the last day of the session "The Claims of Congregational Communities throughout the World on the Sympathy and Aid of the Congregational Churches in England and America" were presented by S. N. Jackson, M. D., of Kingston, Ontario, for Canada; Mr. Josiah Mullins, of Sydney, N. S. W., for Australia; the Rev. W. Mann, of D'Urban, Natal, for Africa; and the Rev. Henry A. Stimson, of St. Louis, for churches on the American frontier and for the African missions. Pastor Moore, of Dordrecht, spoke in behalf of the Congregationalists of the Netherlands; the Rev. A. W. Clark, of Prague, for those of Bohemia; and Mr. Deacon Holmes, of Montclair, N. J., represented the American Missionary Association. The Rev. R. Wardlaw Thompson spoke of the method of dealing with communities that have passed out of heathenism, but have not yet acquired a steadfast Christian moral sense and purpose and power. Dr. N. G. Clark, Secretary of the American Board, introduced the subject of "Congregationalism and the Great Commission," and was followed by representatives of the missionary societies. A valedictory address was delivered by the Rev. Dr. Joseph Parker. Provision was made for holding a second meeting of the Council in the United States, for which purpose the National Congregational Council of the United States was requested to issue a call at its meeting in 1892, naming such year for the meeting as it might decide upon. Besides memorial excursions to Scrooby and Plymouth, places associated with the history of the American Pilgrims, the American delegates to the Council, with some of the others, visited Leyden, Holland, where a tablet erected to the memory of the Rev. John Robinson, pastor of the Church of the Pilgrims, was unveiled. The tablet, which is of bronze, bears the following inscription:

The Mayflower, 1620. In memory of Rev. John Robinson, M. A., pastor of the English church worshipping over against this spot, A. D. 1609-1625, whence at his prompting went forth the Pilgrim Fathers to settle New England in 1620. Buried under this house of worship, 4 Mar. 1625; æt. XLIX years. In memoria æterna erit justus. Erected by the National Council of the Congregational Churches of the United States of America. A. D. 1891.

A presentation address committing the tablet to the care of the Ecclesiastical Commissioners of Leyden was made by the Rev. Charles Ray Palmer. The charge was accepted by the burgo-master in behalf of the commissioners, and an address was made by Prof. Kuenen, who called attention to the fact that Mr. Robinson had been a member of the University of Leyden.

CONGRESS OF THE UNITED STATES.
The second session of the Fifty-first Congress began on Dec. 1, 1890. The annual message of the President was sent in, and read as follows:

To the Senate and House of Representatives:

The reports of the several executive departments which will be laid before Congress in the usual course will exhibit in detail the operations of the Govern-

ment for the last fiscal year. Only the more important incidents and results, and chiefly such as may be the foundation of the recommendations I shall submit, will be referred to in this annual message.

The vast and increasing business of the Government has been transacted by the several departments during the year with faithfulness, energy, and success. The revenues, amounting to above \$450,000,000, have been collected and disbursed without revealing, so far as I can ascertain, a single case of defalcation or embezzlement. An earnest effort has been made to stimulate a sense of responsibility and public duty in all officers and employes of every grade, and the work done by them has almost wholly escaped unfavorable criticism. I speak of these matters with freedom because the credit of this good work is not mine, but is shared by the heads of the several departments with the great body of faithful officers and employes who serve under them. The closest scrutiny of Congress is invited to all the methods of administration and to every item of expenditure.

The friendly relations of our country with the nations of Europe and of the East have been undisturbed, while the ties of good will and common interest that bind us to the states of the Western Hemisphere have been notably strengthened by the conference held in this capital to consider measures for the general welfare. Pursuant to the invitation authorized by Congress, the representatives of every independent state of the American continent and of Hayti met in conference in this capital in October, 1889, and continued in session until the 19th of last April. This important convocation marks a most interesting and influential epoch in the history of the Western Hemisphere. It is noteworthy that Brazil, invited while under an imperial form of government, shared as a republic in the deliberations and results of the conference. The recommendations of this conference were all transmitted to Congress at the last session.

The International Marine Conference, which sat at Washington last winter, reached a very gratifying result. The regulations suggested have been brought to the attention of all the governments represented, and their general adoption is confidently expected. The legislation of Congress at the last session is in conformity with the propositions of the conference, and the proclamation therein provided for will be issued when the other powers have given notice of their adhesion.

The conference of Brussels, to devise means for suppressing the slave trade in Africa, afforded an opportunity for a new expression of the interest the American people feel in that great work. It soon became evident that the measure proposed would tax the resources of the Congo Basin beyond the revenues available under the general act of Berlin of 1884. The United States, not being a party to that act, could not share in its revision, but by a separate act the independent state of the Congo was freed from the restrictions upon a customs revenue. The demoralizing and destructive traffic in ardent spirits among the tribes also claimed the earnest attention of the conference, and the delegates of the United States were foremost in advocating measures for its repression. An accord was reached, the influence of which will be very helpful and extend over a wide region. As soon as these measures shall receive the sanction of the Netherlands, for a time withheld, the general acts will be submitted for ratification by the Senate. Meanwhile negotiations have been opened for a new and complete treaty of friendship, commerce, and navigation between the United States and the independent State of the Congo.

Toward the end of the past year the only independent monarchical government on the western continent, that of Brazil, ceased to exist, and was succeeded by a republic. Diplomatic relations were at once established with the new Government, but it was not completely recognized until an opportunity had been afforded to ascertain that it had popular approval and

support. When the course of events had yielded assurance of this fact, no time was lost in extending to the new Government a full and cordial welcome into the family of American commonwealths. It is confidently believed that the good relations of the two countries will be preserved, and that the future will witness an increased intimacy of intercourse and an expansion of their mutual commerce.

The peace of Central America has again been disturbed through a revolutionary change in Salvador, which was not recognized by other states, and hostilities broke out between Salvador and Guatemala, threatening to involve all Central America in conflict and to undo the progress which had been made toward a union of their interests. The efforts of this Government were promptly and zealously exerted to compose their differences, and through the active efforts of the representative of the United States a provisional treaty of peace was signed Aug. 26, whereby the right of the Republic of Salvador to choose its own rules was recognized. Gen. Ezeta, the chief of the Provisional Government, has since been confirmed in the presidency by the Assembly, and diplomatic recognition duly followed.

The killing of Gen. Barrundia on board the Pacific mail steamer *Acapulco*, while anchored in transit in the port of San José de Guatemala, demanded careful inquiry. Having failed in a revolutionary attempt to invade Guatemala from Mexican territory, Gen. Barrundia took passage at *Acapulco* for Panama. The consent of the representatives of the United States was sought to effect his seizure, first at Champerico, where the steamer touched, and afterward at San José. The captain of the steamer refused to give up his passenger without a written order from the United States minister; the latter furnished the desired letter, stipulating, as the condition of his action, that Gen. Barrundia's life should be spared and that he should be tried only for offenses growing out of his insurrectionary movements. This letter was produced to the captain of the *Acapulco* by the military commander at San José, as his warrant to take the passenger from the steamer. Gen. Barrundia resisted capture and was killed. It being evident that the minister, Mr. Mizner, had exceeded the bounds of his authority in intervening, in compliance with the demands of the Guatemalan authorities, to authorize and effect, in violation of precedent, the seizure on a vessel of the United States of a passenger in transit charged with political offenses, in order that he might be tried for such offenses under what was described as martial law, I was constrained to disavow Mr. Mizner's act and recall him from his post.

The Nicaragua Canal project, under the control of our citizens, is making most encouraging progress, all the preliminary conditions and initial operations having been accomplished within the prescribed time.

During the past year negotiations have been renewed for the settlement of the claims of American citizens against the Government of Chili, principally growing out of the late war with Peru. The reports from our minister at Santiago warrant the expectation of an early and satisfactory adjustment.

Our relations with China, which have for several years occupied so important a place in our diplomatic history, have called for careful consideration and have been the subject of much correspondence.

The communications of the Chinese minister have brought into view the whole subject of our conventional relations with his country; and at the same time this Government, through its legation at Pekin, has sought to arrange various matters and complaints touching the interests and protection of our citizens in China.

In pursuance of the concurrent resolution of Oct. 1, 1890, I have proposed to the governments of Mexico and Great Britain to consider a conventional regulation of the passage of Chinese laborers across our southern and northern frontiers.

On the 22d day of August last Sir Edmund Monson, the arbitrator selected under the treaty of Dec. 6, 1888, rendered an award to the effect that no compensation was due from the Danish Government to the United States on account of what is commonly known as the Carlos Butterfield claim.

Our relations with the French Republic continue to be cordial. Our representative at that court has very diligently urged the removal of the restrictions imposed upon our meat products, and it is believed that substantial progress has been made toward a just settlement.

The Samoan treaty, signed last year at Berlin by the representatives of the United States, Germany, and Great Britain, after due ratification and exchange, has begun to produce salutary effects. The formation of the government agreed upon will soon replace the disorder of the past by a stable administration, alike just to the natives and equitable to the three powers most concerned in trade and intercourse with the Samoan Islands. The chief justice has been chosen by the King of Sweden and Norway, on the invitation of the three powers, and will soon be installed. The land commission and the municipal council are in process of organization. A rational and evenly distributed scheme of taxation, both municipal and upon imports, is in operation. Malietoa is respected as King.

The new treaty of extradition with Great Britain, after due ratification, was proclaimed on the 25th of last March. Its beneficial working is already apparent.

The difference between the two governments touching the fur-seal question in the Behring Sea is not yet adjusted, as will be seen by the correspondence which will soon be laid before Congress. The offer to submit the question to arbitration, as proposed by Her Majesty's Government, has not been accepted, for the reason that the form of submission proposed is not thought to be calculated to assure a conclusion satisfactory to either party. It is sincerely hoped that before the opening of another sealing season some arrangement may be effected which will assure the United States a property right, derived from Russia, which was not disregarded by any nation for more than eighty years preceding the outbreak of the existing trouble.

In the tariff act a wrong was done to the Kingdom of Hawaii which I am bound to presume was wholly unintentional. Duties were levied on certain commodities which are included in the reciprocity treaty now existing between the United States and the Kingdom of Hawaii, without indicating the necessary exception in favor of that kingdom. I hope Congress will repair what might otherwise seem to be a breach of faith on the part of this Government.

An award in favor of the United States in the matter of the claim of Mr. Van Bokkelen against Hayti was rendered on the 4th of December, 1888, but owing to the disorders then and afterward prevailing in Hayti the terms of payment were not observed. A new agreement as to the time of payment has been approved and is now in force. Other just claims of citizens of the United States for redress of wrongs suffered during the late political conflict in Hayti will, it is hoped, speedily yield to friendly treatment.

Propositions for the amendment of the treaty of extradition between the United States and Italy are now under consideration.

You will be asked to provide the means of accepting the invitation of the Italian Government to take part in an approaching conference to consider the adoption of a universal prime meridian from which to reckon longitude and time. As this proposal follows in the track of the reform sought to be initiated by the Meridian Conference of Washington, held on the invitation of this Government, the United States should manifest a friendly interest in the Italian proposal.

In this connection I may refer with approval to the suggestion of my predecessors, that standing provision be made for accepting, whenever deemed ad-

visible, the frequent invitations of foreign governments to share in conferences looking to the advancement of international reforms in regard to science, sanitation, commercial laws and procedure, and other matters affecting the intercourse and progress of modern communities.

In the summer of 1889 an incident occurred which for some time threatened to interrupt the cordiality of our relations with the Government of Portugal. That Government seized the Delagoa Bay Railway, which was constructed under a concession granted to an American citizen, and at the same time annulled the charter. The concessionary, who had embarked his fortune in the enterprise, having exhausted other means of redress, was compelled to invoke the protection of his Government. Our representations, made coincidentally with those of the British Government, whose subjects were also largely interested, happily resulted in the recognition by Portugal of the propriety of submitting the claim for indemnity, growing out of its action, to arbitration. This plan of settlement having been agreed upon, the interested powers readily concurred in the proposal to submit the case to the judgment of three eminent jurists, to be designated by the President of the Swiss Republic, who upon the joint invitation of the governments of the United States, Great Britain, and Portugal, has selected persons well qualified for the task before them.

The revision of our treaty relations with the Empire of Japan has continued to be the subject of consideration and of correspondence. The questions involved are both grave and delicate; and, while it will be my duty to see that the interests of the United States are not by any changes exposed to undue discrimination, I sincerely hope that such revision as will satisfy the legitimate expectations of the Japanese Government and maintain the present and long existing friendly relations between Japan and the United States will be effected.

The friendship between our country and Mexico, born of close neighborhood and strengthened by many considerations of intimate intercourse and reciprocal interest, has never been more conspicuous than now, nor more hopeful of increased benefit to both nations. The intercourse of the two countries by rail, already great, is making constant growth. The established lines, and those recently projected, add to the intimacy of traffic and open new channels of access to fresh areas of demand and supply. The importance of the Mexican railway system will be further enhanced, to a degree almost impossible to forecast, if it should become a link in the projected intercontinental railway. I recommend that our mission in the city of Mexico be raised to the first class.

The cordial character of our relations with Spain warrants the hope that by the continuance of methods of friendly negotiation much may be accomplished in the direction of an adjustment of pending questions and of the increase of our trade. The extent and development of our trade with the island of Cuba invest the commercial relations of the United States and Spain with a peculiar importance. It is not doubted that a special arrangement in regard to commerce, based upon the reciprocity provision of the recent tariff act, would operate most beneficially for both governments. This subject is now receiving attention.

The restoration of the remains of John Ericsson to Sweden afforded a gratifying occasion to honor the memory of the great inventor to whose genius our country owes so much, and to bear witness to the unbroken friendship which has existed between the land which bore him and our own, which claimed him as a citizen.

On the 2d of September last the commission appointed to revise the proceedings of the commission under the claims convention between the United States and Venezuela of 1866 brought its labors to a close within the period fixed for that purpose. The proceedings of the late commission were characterized

by a spirit of impartiality and a high sense of justice, and an incident which was for many years the subject of discussion between the two governments has been disposed of in a manner alike honorable and satisfactory to both parties. For the settlement of the claim of the Venezuela Steam Transportation Company, which was the subject of a joint resolution adopted at the last session of Congress, negotiations are still in progress, and their early conclusion is anticipated.

The legislation of the past few years has evinced on the part of Congress a growing realization of the importance of the consular service in fostering our commercial relations abroad and in protecting the domestic revenues. As the scope of operations expands increased provision must be made to keep up the essential standard of efficiency. The necessity of some adequate measure of supervision and inspection has been so often presented that I need only commend the subject to your attention.

The revenues of the Government from all sources for the fiscal year ending June 30, 1890, were \$463,963,080.55, and the total expenditures for the same period were \$358,613,584.52. The postal receipts have not heretofore been included in the statement of these aggregates, and for the purpose of comparison the sum of \$60,882,097.92 should be deducted from both sides of the account. The surplus for the year, including the amount applied to the sinking fund, was \$105,344,496.03. The receipts for 1890 were \$16,030,923.79 and the expenditures \$15,739,871 in excess of those of 1889. The customs receipts increased \$5,835,842.88, and the receipts from internal revenue \$11,725,191.89; while on the side of expenditures, that for pensions was \$19,312,075.96 in excess of the preceding year.

The Treasury statement for the current fiscal year, partly actual and partly estimated, is as follows: Receipts from all sources, \$406,000,000; total expenditures, \$354,000,000, leaving a surplus of \$52,000,000—not taking the postal receipts into the account on either side. The loss of revenue from customs for the last quarter is estimated at \$25,000,000, but from this is deducted a gain of about \$16,000,000, realized during the first four months of the year.

For the year 1892 the total estimated receipts are \$373,000,000 and the estimated expenditures \$357,852,209.42, leaving an estimated surplus of \$15,147,790.58; which, with a cash balance of \$52,000,000 at the beginning of the year, will give \$67,147,790.58 as the sum available for the redemption of outstanding bonds or other uses. The estimates of receipts and expenditures for the Post-Office Department, being equal, are not included in this statement on either side.

The act "directing the purchase of silver bullion and the issue of Treasury notes thereon," approved July 14, 1890, has been administered by the Secretary of the Treasury with an earnest purpose to get into circulation at the earliest possible dates the full monthly amounts of Treasury notes contemplated by its provisions, and at the same time to give to the market for silver bullion such support as the law contemplates. The recent depreciation in the price of silver has been observed with regret. The rapid rise in price which anticipated and followed the passage of the act was influenced in some degree by speculation, and the recent reaction is in part the result of the same cause and in part of the recent monetary disturbances. Some months of further trial will be necessary to determine the permanent effect of the recent legislation upon silver values, but it is gratifying to know that the increased circulation secured by the act has exerted and will continue to exert a most beneficial influence upon business and upon general values.

While it has not been thought best to renew formally the suggestion of an international conference looking to an agreement touching the full use of silver for coinage at a uniform ratio, care has been taken to observe closely any change in the situation abroad,

and no favorable opportunity will be lost to promote a result which it is confidently believed would confer very large benefits upon the commerce of the world.

The recent monetary disturbances in England are not unlikely to suggest a re-examination of opinions upon this subject. Our very large supply of gold will, if not lost by impulsive legislation in the supposed interest of silver, give us a position of advantage in promoting a permanent and safe international agreement for the free use of silver as a coin metal.

The efforts of the Secretary to increase the volume of money in circulation, by keeping down the Treasury surplus to the lowest practicable limit, have been unremitting and in a very high degree successful. The tables presented by him, showing the increase of money in circulation during the last two decades, and especially the table showing the increase during the nineteen months he has administered the affairs of the department, are interesting and instructive. The increase of money in circulation during the nineteen months has been in the aggregate \$93,866,813, or about \$1.50 per capita, and of this increase only \$7,100,000 was due to the recent silver legislation. That this substantial and needed aid given to commerce resulted in an enormous reduction of the public debt, and of the annual interest charge, is matter of increased satisfaction. There have been purchased and redeemed since March 4, 1889, 4 and 4½ per cent. bonds to the amount of \$211,832,450, at a cost of \$246,620,741, resulting in the reduction of the annual interest charge of \$8,967,609, and a total saving of interest of \$51,576,706.

I notice with great pleasure the statement of the Secretary that the receipts from internal revenue have increased during the last fiscal year nearly \$12,000,000, and that the cost of collecting this larger revenue was less by \$90,617 than for the same purpose in the preceding year. The percentage of cost of collecting the customs revenue was less for the last fiscal year than ever before.

The customs administration board provided for by the act of June 10, 1890, was selected with great care, and is composed in part of men whose previous experience in the administration of the old customs regulations had made them familiar with the evils to be remedied, and in part of men whose legal and judicial acquirements and experience seemed to fit them for the work of interpreting and applying the new statute.

The chief aim of the law is to secure honest valuations of all dutiable merchandise, and to make these valuations uniform at all our ports of entry. It had been made manifest, by a congressional investigation, that a system of undervaluation had been long in use by certain classes of importers, resulting not only in a great loss of revenue, but in a most intolerable discrimination against honesty. It is not seen how this legislation, when it is understood, can be regarded by the citizens of any country having commercial dealings with us as unfriendly. If any duty is supposed to be excessive let the complaint be lodged there. It will surely not be claimed by any well-disposed people that a remedy may be sought and allowed in a system of *quasi-smuggling*.

The report of the Secretary of War exhibits several gratifying results attained during the year by wise and unostentatious methods. The percentage of desertions from the army (an evil for which both Congress and the department have long been seeking a remedy) has been reduced during the past year 24 per cent., and for the months of August and September, during which time the favorable effects of the act of June 16 were felt, 33 per cent. as compared with the same months of 1889.

The results attained by a reorganization and consolidation of the divisions having charge of the hospital and service records of the volunteer soldiers are very remarkable. This change was effected in July, 1889, and at that time there were 40,654 cases awaiting attention, more than half of these being calls from the Pension Office for information necessary to the

adjudication of pension claims. On the 30th day of June last, though over 300,000 new calls had come in, there was not a single case that had not been examined and answered.

I concur in the recommendations of the Secretary that adequate and regular appropriations be continued for coast-defense works and ordnance. Plans have been practically agreed upon, and there can be good reason for delaying the execution of them; while the defenseless state of our great seaports furnishes an urgent reason for wise expedition.

The encouragement that has been extended to the militia of the States, generally and most appropriately designated the "National Guard," should be continued and enlarged. These military organizations constitute in a large sense the army of the United States, while about five sixths of the annual cost of their maintenance is defrayed by the States.

The report of the Attorney-General is under the law submitted directly to Congress, but as the Department of Justice is one of the executive departments, some reference to the work done is appropriate here.

A vigorous, and in the main an effective, effort has been made to bring to trial and punishment all violators of the laws; but at the same time care has been taken that frivolous and technical offenses should not be used to swell the fees of officers or to harass well-disposed citizens. Especial attention is called to the facts connected with the prosecution of violations of the election laws, and of offenses against United States officers. The number of convictions secured, very many of them upon pleas of guilty, will, it is hoped, have a salutary restraining influence. There have been several cases where postmasters appointed by me have been subjected to violent interference in the discharge of their official duties, and to persecutions and personal violence of the most extreme character. Some of these cases have been dealt with through the Department of Justice, and in some cases the post-offices have been abolished or suspended. I have directed the Postmaster-General to pursue this course in all cases where other efforts failed to secure for any postmaster, not himself in fault, an opportunity peacefully to exercise the duties of his office. But such action will not supplant the efforts of the Department of Justice to bring the particular offenders to punishment.

The vacation by judicial decrees of fraudulent certificates of naturalization, upon bills in equity filed by the Attorney-General in the circuit court of the United States, is a new application of a familiar equity jurisdiction. Nearly one hundred such decrees have been taken during the year, the evidence disclosing that a very large number of fraudulent certificates of naturalization have been issued. And in this connection I beg to renew my recommendation that the laws be so amended as to require a more full and searching inquiry into all the facts necessary to naturalization before any certificates are granted. It certainly is not too much to require that an application for American citizenship shall be heard with as much care and recorded with as much formality as are given to cases involving the pettiest property right.

At the last session I returned, without my approval, a bill entitled "An act to prohibit book-making and pool selling in the District of Columbia," and stated my objection to be that it did not prohibit, but in fact licensed what it purported to prohibit. An effort will be made under existing laws to suppress this evil, though it is not certain that they will be found adequate.

The report of the Postmaster-General shows the most gratifying progress in the important work committed to his direction. The business methods have been greatly improved. A large economy in expenditures and an increase of four and three quarter millions in receipts have been realized. The deficiency this year is \$5,786,300 as against \$6,350,183 last year, notwithstanding the great enlargement of the service. Mail routes have been extended and quickened, and

greater accuracy and dispatch in distribution and delivery have been attained. The report will be found to be full of interest and suggestion, not only to Congress, but to those thoughtful citizens who may be interested to know what business methods can do for that department of public administration which most nearly touches all our people.

The passage of the act to amend certain sections of the Revised Statutes relating to lotteries, approved Sept. 12, 1890, has been received with great and deserved popular favor. The Post-Office Department and the Department of Justice at once entered upon the enforcement of the law with sympathetic vigor, and already the public mails have been largely freed from the fraudulent and demoralizing appeals and literature emanating from the lottery companies.

The construction and equipment of the new ships for the navy have made very satisfactory progress. Since March 4, 1889, nine new vessels have been put in commission, and during this winter four more, including one monitor, will be added. The construction of the other vessels authorized is being pushed, both in the Government and private yards, with energy, and watched with the most scrupulous care.

The experiments conducted during the year to test the relative resisting power of armor plates have been so valuable as to attract great attention in Europe. The only part of the work upon the new ships that is threatened by unusual delay is the armor plating, and every effort is being made to reduce that to the minimum. It is a source of congratulation that the anticipated influence of these modern vessels upon the *esprit de corps* of the officers and seamen has been fully realized. Confidence and pride in the ship among the crew are equivalent to a secondary battery. Your favorable consideration is invited to the recommendations of the Secretary.

The report of the Secretary of the Interior exhibits with great fullness and clearness the vast work of that department and the satisfactory results attained. The suggestions made by him are earnestly commended to the consideration of Congress, though they can not all be given particular mention here.

The several acts of Congress looking to the reduction of the larger Indian reservations, to the more rapid settlement of the Indians upon individual allotments, and the restoration to the public domain of lands in excess of their needs, have been largely carried into effect, so far as the work was confided to the Executive. Agreements have been concluded since March 4, 1889, involving the cession to the United States of about 14,726,000 acres of land. These contracts have, as required by law, been submitted to Congress for ratification and for the appropriations necessary to carry them into effect. Those with the Sisseton and Wahpeton, Sac and Fox, Iowa, Pottawattamies and Absentee Shawnees, and Cœur d'Alène tribes have not yet received the sanction of Congress. Attention is also called to the fact that the appropriations made in the case of the Sioux Indians have not covered all the stipulated payments. This should be promptly corrected. If an agreement is confirmed, all of its terms should be complied with without delay, and full appropriations should be made.

The policy outlined in my last annual message in relation to the patenting of lands to settlers upon the public domain has been carried out in the administration of the Land Office. No general suspicion or imputation of fraud has been allowed to delay the hearing and adjudication of individual cases upon their merits. The purpose has been to perfect the title of honest settlers with such promptness that the value of the entry might not be swallowed by the expense and extortions to which delay subjected the claimant. The average monthly issue of agricultural patents has been increased about 6,000.

The disability pension act, which was approved on the 27th of June last, has been put in operation as rapidly as was practicable. The increased clerical force provided was selected and assigned to work, and a considerable part of the force engaged in examina-

tions in the field was recalled and added to the working force of the office. The examination and adjudication of claims have, by reason of improved methods, been more rapid than ever before. There is no economy to the Government in delay, while there is much hardship and injustice to the soldier. The anticipated expenditure, while very large, will not, it is believed, be in excess of the estimates made before the enactment of the law. This liberal enlargement of the general law should suggest a more careful scrutiny of bills for special relief, both as to the cases where relief is granted and as to the amount allowed.

The increasing numbers and influence of the non-Mormon population in Utah are observed with satisfaction. The recent letter of Wilford Woodruff, President of the Mormon Church, in which he advised his people "to refrain from contracting any marriage forbidden by the laws of the land," has attracted wide attention, and it is hoped that its influence will be highly beneficial in restraining infractions of the laws of the United States. But the fact should not be overlooked that the doctrine or belief of the church that polygamous marriages are rightful and supported by divine revelation remains unchanged. President Woodruff does not renounce the doctrine, but refrains from teaching it, and advises against the practice of it because the law is against it. Now, it is quite true that the law should not attempt to deal with the faith or belief of any one; but it is quite another thing, and the only safe thing, so to deal with the Territory of Utah as that those who believe polygamy to be rightful shall not have the power to make it lawful.

The admission of the States of Wyoming and Idaho to the Union are events full of interest and congratulation, not only to the people of those States now happily endowed with a full participation in our privileges and responsibilities, but to all our people. Another belt of States stretches from the Atlantic to the Pacific.

The work of the Patent Office has won from all sources very high commendation. The amount accomplished has been very largely increased, and all the results have been such as to secure confidence and consideration for the suggestions of the commissioner.

The enumeration of the people of the United States under the provisions of the act of March 1, 1889, has been completed, and the result will be at once officially communicated to Congress. The completion of this decennial enumeration devolves upon Congress the duty of making a new apportionment of Representatives "among the several States according to their respective numbers."

At the last session I had occasion to return with my objections several bills making provisions for the erection of public buildings, for the reason that the expenditures contemplated were in my opinion greatly in excess of any public need. No class of legislation is more liable to abuse, or to degenerate into an unseemly scramble about the public Treasury, than this. There should be exercised in this matter a wise economy based upon some responsible and impartial examination and report as to each case, under a general law.

The report of the Secretary of Agriculture deserves especial attention in view of the fact that the year has been marked in a very unusual degree by agitation and organization among the farmers looking to an increase in the profits of their business. It will be found that the efforts of the department have been intelligently and zealously devoted to the promotion of the interests intrusted to its care.

A very substantial improvement in the market prices of the leading farm products during the year is noticed. The price of wheat advanced from 81 cents in October, 1889, to \$1.002 in October, 1890; corn, from 31 cents to 504 cents; oats, from 124 cents to 43 cents; and barley, from 63 cents to 78 cents. Meats showed a substantial but not so large an increase. The export trade in live animals and fowls shows a very large increase; the total value of such ex-

ports for the year ending June 30, 1890, was \$33,000,000, and the increase over the preceding year was over \$15,000,000. Nearly 200,000 more cattle and over 45,000 more hogs were exported than in the preceding year. The export trade in beef and pork products and in dairy products was very largely increased, the increase in the article of butter alone being from 15,504,978 pounds to 29,748,042 pounds, and the total increase in the value of meat and dairy products exported being \$34,000,000. This trade, so directly helpful to the farmer, it is believed will be yet further and very largely increased when the system of inspection and sanitary supervision now provided by law is brought fully into operation.

The efforts of the Secretary to establish the healthfulness of our meats against the disparaging imputations that have been put upon them abroad have resulted in substantial progress. Veterinary surgeons sent out by the department are now allowed to participate in the inspection of the live cattle from this country landed at the English docks, and during the several months they have been on duty no case of contagious pleuro-pneumonia has been reported. This inspection abroad and the domestic inspection of live animals and pork products, provided for by the act of August 20, 1890, will afford as perfect a guarantee for the wholesomeness of our meats offered for foreign consumption as is anywhere given to any food product, and its non-acceptance will quite clearly reveal the real motive of any continued restriction of their use; and that having been made clear, the duty of the Executive will be very plain.

The information given by the Secretary of the progress and prospects of the beet-sugar industry is full of interest. It has already passed the experimental stage and is a commercial success. The area over which the sugar beet can be successfully cultivated is very large, and another field crop of great value is offered to the choice of the farmer.

The Secretary of the Treasury concurs in the recommendation of the Secretary of Agriculture that the official supervision provided by the tariff law for sugar of domestic production shall be transferred to the Department of Agriculture.

The law relating to the civil service has, so far as I can learn, been executed by those having the power of appointment in the classified service with fidelity and impartiality, and the service has been increasingly satisfactory. The report of the commission shows a large amount of good work done during the year with very limited appropriations.

I congratulate the Congress and the country upon the passage at the first session of the Fifty-first Congress of an unusual number of laws of very high importance. That the results of this legislation will be the quickening and enlargement of our manufacturing industries, larger and better markets for our bread-stuffs and provisions both at home and abroad, more constant employment and better wages for our working people, and an increased supply of a safe currency for the transaction of business, I do not doubt. Some of these measures were enacted at so late a period that the beneficial effects upon commerce which were in the contemplation of Congress have as yet but partially manifested themselves.

The general trade and industrial conditions throughout the country during the year have shown a marked improvement. For many years prior to 1888 the merchandise balances of foreign trade had been largely in our favor, but during that year and the year following they turned against us. It is very gratifying to know that the last fiscal year again shows a balance in our favor of over \$68,000,000. The bank clearings, which furnish a good test of the volume of business transacted, for the first ten months of the year 1890 show, as compared with the same months of 1889, an increase for the whole country of about 8.4 per cent., while the increase outside of the city of New York was over 13 per cent. During the month of October the clearings of the whole country showed an increase of 3.1 per cent. over October, 1889, while out-

side of New York the increase was 11½ per cent. These figures show that the increase in the volume of business was very general throughout the country. That this large business was being conducted upon a safe and profitable basis is shown by the fact that there were 300 less failures reported in October, 1890, than in the same month of the preceding year, with liabilities diminished by about \$5,000,000.

The value of our exports of domestic merchandise during the last year was over \$115,000,000 greater than the preceding year, and was only exceeded once in our history. About \$100,000,000 of this excess was in agricultural products. The production of pig iron — always a good gauge of general prosperity — is shown by a recent census bulletin to have been 153 per cent. greater in 1890 than in 1880, and the production of steel 290 per cent. greater. Mining in coal has had no limitation except that resulting from deficient transportation. The general testimony is that labor is everywhere fully employed, and the reports for the last year show a smaller number of employees affected by the strikes and lockouts than in any other year since 1884. The depression in the prices of agricultural products had been greatly relieved, and a buoyant and hopeful tone was beginning to be felt by all our people.

These promising influences have been in some degree checked by the surprising and very unfavorable monetary events which have recently taken place in England. It is gratifying to know that these did not grow in any degree out of the financial relations of London with our people or out of any discredit attached to our securities held in that market. The return of our bonds and stocks was caused by a money stringency in England, not by any loss of value or credit in the securities themselves. We could not, however, wholly escape the ill effects of a foreign monetary agitation accompanied by such extraordinary incidents as characterized this. It is not believed, however, that these evil incidents, which have for the time unfavorably affected values in this country, can long withstand the strong, safe, and wholesome influences which are operating to give to our people profitable returns in all branches of legitimate trade and industry. The apprehension that our tariff may again and at once be subjected to important general changes would undoubtedly add a depressing influence of the most serious character.

The general tariff act has only partially gone into operation, some of its important provisions being limited to take effect at dates yet in the future. The general provisions of the law have been in force less than sixty days. Its permanent effects upon trade and prices still largely stand in conjecture. It is curious to note that the advance in the prices of articles wholly unaffected by the tariff act was by many hastily ascribed to that act. Notice was not taken of the fact that the general tendency of the markets was upward, from influences wholly apart from the recent tariff legislation. The enlargement of our currency by the silver bill undoubtedly gave an upward tendency to trade, and had a marked effect on prices; but this natural and desired effect of the silver legislation was by many erroneously attributed to the tariff act.

There is neither wisdom nor justice in the suggestion that the subject of tariff revision shall be again opened before this law has had a fair trial. It is quite true that every tariff schedule is subject to objections. No bill was ever framed, I suppose, that in all of its rates and classifications had the full approval even of a party caucus. Such legislation is always and necessarily the product of compromise as to details, and the present law is no exception. But in its general scope and effect I think it will justify the support of those who believe that American legislation should conserve and defend American trade and the wages of American workmen.

The misinformation as to the terms of the act, which has been so widely disseminated at home and abroad, will be corrected by experience, and the evil auguries as to its results confounded by the market reports,

the savings banks, international trade balances, and the general prosperity of our people. Already we begin to hear from abroad, and from our custom houses, that the prohibitory effect upon importations imputed to the act is not justified. The imports at the port of New York for the first three weeks of November were nearly 8 per cent. greater than for the same period in 1889, and 29 per cent. greater than in the same period of 1888; and so far from being an act to limit exports, I confidently believe that under it we shall secure a larger and more profitable participation in foreign trade than we have ever enjoyed, and that we shall recover a proportionate participation in the ocean carrying trade of the world.

The criticisms of the bill that have come to us from foreign sources may well be rejected for repugnancy. If these critics really believe that the adoption by us of a free-trade policy, or of tariff rates having reference solely to revenue, would diminish the participation of their own countries in the commerce of the world, their advocacy and promotion by speech and other forms of organized effort of this movement among our people is a rare exhibition of unselfishness in trade. And, on the other hand, if they sincerely believe that the adoption of a protective-tariff policy by this country injures to their profit and our hurt, it is noticeably strange that they should lead the outcry against the authors of a policy so helpful to their countrymen, and crown with their favor those who would snatch from them a substantial share of a trade with other lands already inadequate to their necessities.

There is no disposition among any of our people to promote prohibitory or retaliatory legislation. Our policies are adopted, not to the hurt of others, but to secure for ourselves those advantages that fairly grow out of our favored position as a nation. Our form of government, with its incident of universal suffrage, makes it imperative that we shall save our working people from the agitations and distresses which scant work and wages that have no margin for comfort always beget. But after all this is done it will be found that our markets are open to friendly commercial exchanges of enormous value to the other great powers.

From the time of my induction into office the duty of using every power and influence given by law to the executive department for the development of larger markets for our products, especially our farm products, has been kept constantly in mind, and no effort has been or will be spared to promote that end. We are under no disadvantage in any foreign market, except that we pay our workmen and workwomen better wages than are paid elsewhere—better abstractly, better relatively, to the cost of the necessities of life. I do not doubt that a very largely increased foreign trade is accessible to us without bartering for it either our home market for such products of the farm and shop as our own people can supply or the wages of our working people.

In many of the products of wood and iron, and in meats and breadstuffs, we have advantages that only need better facilities of intercourse and transportation to secure for them large foreign markets. The reciprocity clause of the tariff act wisely and effectively opens the way to secure a large reciprocal trade in exchange for the free admission to our ports of certain products. The right of independent nations to make special reciprocal trade concessions is well established, and does not impair either the comity due to other powers or what is known as the "favored-nation clause," so generally found in commercial treaties. What is given to one for an adequate agreed consideration can not be claimed by another freely. The state of the revenues was such that we could dispense with any import duties upon coffee, tea, hides, and the lower grades of sugar and molasses. That the large advantage resulting to the countries producing and exporting these articles by placing them on the free list entitled us to expect a fair return in the way of customs concessions upon articles exported by us

to them was so obvious that to have gratuitously abandoned this opportunity to enlarge our trade would have been an unpardonable error.

There were but two methods of maintaining control of this question open to Congress: to place all of these articles upon the dutiable list, subject to such treaty agreements as could be secured, or to place them all presently upon the free list, but subject to the reimposition of specified duties if the countries from which we received them should refuse to give to us suitable reciprocal benefits. This latter method, I think, possesses great advantages. It expresses in advance the consent of Congress to reciprocity arrangements affecting these products, which must otherwise have been delayed and unascertained until each treaty was ratified by the Senate and the necessary legislation enacted by Congress.

Experience has shown that some treaties looking to reciprocal trade have failed to secure a two-thirds vote in the Senate for ratification, and others, having passed that stage, have for years awaited the concurrence of the House and Senate in such modifications of our revenue laws as were necessary to give effect to their provisions. We now have the concurrence of both Houses in advance, in a distinct and definite offer of free entry to our ports of specific articles. The Executive is not required to deal in conjecture as to what Congress will accept. Indeed, this reciprocity provision is more than an offer. Our part of the bargain is complete; delivery has been made; and when the countries from which we receive sugar, coffee, tea, and hides have placed on their free lists such of our products as shall be agreed upon, as an equivalent for our concession, a proclamation of that fact completes the transaction; and, in the mean time, our own people have free sugar, tea, coffee, and hides.

The indications thus far given are very hopeful of early and favorable action by the countries from which we receive our large imports of coffee and sugar; and it is confidently believed that if steam communication with these countries can be promptly improved and enlarged, the next year will show a most gratifying increase in our exports of breadstuffs and provisions, as well as of some important lines of manufactured goods.

In addition to the important bills that became laws before the adjournment of the last session, some other bills of the highest importance were well advanced toward a final vote, and now stand upon the calendars of the two Houses in favored positions. The present session has a fixed limit, and if these measures are not now brought to a final vote all the work that has been done upon them by this Congress is lost. The proper consideration of these, of an apportionment bill, and of the annual appropriation bills, will require not only that no working day of the session shall be lost, but that measures of minor and local interest shall not be allowed to interrupt or retard the progress of those that are of universal interest. In view of these conditions I refrain from bringing before you at this time some suggestions that would otherwise be made, and most earnestly invoke your attention to the duty of perfecting the important legislation now well advanced. To some of these measures, which seem to me most important, I now briefly call your attention.

I desire to repeat, with added urgency, the recommendations contained in my last annual message in relation to the development of American steamship lines. The reciprocity clause of the tariff bill will be largely limited, and its benefits retarded and diminished, if provision is not contemporaneously made to encourage the establishment of first-class steam communication between our ports and the ports of such nations as may meet our overtures for enlarged commercial exchanges. The steamship, carrying the mails steadily and frequently, and offering to passengers a comfortable, safe, and speedy transit, is the first condition of foreign trade. It carries the order of the buyer, but not all that is ordered or bought. It

gives to the sailing vessels such cargoes as are not urgent or perishable, and, indirectly at least, promotes that important adjunct of commerce. There is now, both in this country and in the nations of Central and South America, a state of expectation and confidence as to increased trade that will give a double value to your prompt action upon this question.

The present situation of our mail communication with Australia illustrates the importance of early action by Congress. The Oceanic Steamship Company maintains a line of steamers between San Francisco, Sydney, and Auckland, consisting of three vessels, two of which are of United States registry and one of foreign registry. For the service done by this line in carrying the mails we pay annually the sum of \$46,000, being, as estimated, the full sea and United States inland postage, which is the limit fixed by law. The colonies of New South Wales and New Zealand have been paying annually to these lines \$37,000 for carrying the mails from Sydney and Auckland to San Francisco. The contract under which this payment has been made is now about to expire, and those colonies have refused to renew the contract unless the United States shall pay a more equitable proportion of the whole sum necessary to maintain the service.

I am advised by the Postmaster-General that the United States receives for carrying the Australian mails, brought to San Francisco in these steamers, by rail to Vancouver, an estimated annual income of \$75,000; while, as I have stated, we are paying out for the support of the steamship line that brings this mail to us only \$46,000, leaving an annual surplus, resulting from this service, of \$29,000. The trade of the United States with Australia, which is in a considerable part carried by these steamers, and the whole of which is practically dependent upon the mail communication which they maintain, is largely in our favor. Our total exports of merchandise to Australasian ports during the fiscal year ending June 30, 1890, were \$11,266,484; while the total imports of merchandise from these ports were only \$4,277,676. If we are not willing to see this important steamship line withdrawn, or continued with Vancouver substituted for San Francisco as the American terminal, Congress should put it in the power of the Postmaster-General to make a liberal increase in the amount now paid for the transportation of this important mail.

The South Atlantic and Gulf ports occupy a very favored position toward the new and important commerce which the reciprocity clause of the tariff act and the postal shipping bill are designed to promote. Steamship lines from these ports to some northern port of South America will almost certainly effect a connection between the railroad systems of the continents long before any continuous line of railroads can be put into operation. The very large appropriation made at the last session for the harbor of Galveston was justified, as it seemed to me, by these considerations. The great Northwest will feel the advantage of trunk lines to the South as well as to the East, and of the new markets opened for their surplus food products and for many of their manufactured products.

I had occasion in May last to transmit to Congress a report adopted by the International American Conference upon the subject of the incorporation of an international American bank, with a view to facilitating money exchanges between the states represented in that conference. Such an institution would greatly promote the trade we are seeking to develop. I renew the recommendation that a careful and well-guarded charter be granted. I do not think the powers granted should include those ordinarily exercised by trust, guarantee, and safe-deposit companies, or that more branches in the United States should be authorized than are strictly necessary to accomplish the object primarily in view, namely, convenient foreign exchanges. It is quite important that prompt action should be taken in this matter, in order that any appropriations for better communica-

tion with these countries and any agreements that may be made for reciprocal trade may not be hindered by the inconvenience of making exchanges through European money centers or burdened by the tribute which is an incident of that method of business.

The bill for the relief of the Supreme Court has, after many years of discussion, reached a position where final action is easily attainable, and it is hoped that any differences of opinion may be so harmonized as to save the essential features of this very important measure. In this connection I earnestly renew my recommendation that the salaries of the judges of the United States district courts be so readjusted that none of them shall receive less than \$5,000 per annum.

The subject of the unadjusted Spanish and Mexican land grants and the urgent necessity for providing some commission or tribunal for the trial of questions of title growing out of them were twice brought by me to the attention of Congress at the last session. Bills have been reported from the proper committees in both Houses upon the subject, and I very earnestly hope that this Congress will put an end to the delay which has attended the settlement of the disputes as to title between the settlers and the claimants under these grants. These disputes retard the prosperity and disturb the peace of large and important communities. The Governor of New Mexico, in his last report to the Secretary of the Interior, suggests some modifications of the provisions of the pending bills relating to the small holdings of farm lands. I commend to your attention the suggestions of the Secretary of the Interior upon this subject.

The enactment of a national bankrupt law I still regard as very desirable. The Constitution having given to Congress jurisdiction of this subject, it should be exercised, and uniform rules provided for the administration of the affairs of insolvent debtors. The inconveniences resulting from the occasional and temporary exercise of this power by Congress, and from the conflicting State codes of insolvency which come into force immediately, should be removed by the enactment of a simple, inexpensive, and permanent national bankrupt law.

I also renew my recommendation in favor of legislation affording just copyright protection to foreign authors, on a footing of reciprocal advantage for our authors abroad.

It may still be possible for this Congress to inaugurate, by suitable legislation, a movement looking to uniformity and increased safety in the use of couplers and brakes upon freight trains engaged in interstate commerce. The chief difficulty in the way is to secure agreement as to the best appliances, simplicity, effectiveness, and cost being considered. This difficulty will only yield to legislation, which should be based upon full inquiry and impartial tests. The purpose should be to secure the co-operation of all well-disposed managers and owners, but the fearful fact that every year's delay involves the sacrifice of two thousand lives and the maiming of twenty thousand young men should plead both with Congress and the managers against any needless delay.

The subject of the conservation and equal distribution of the water supply of the arid regions has had much attention from Congress, but has not as yet been put upon a permanent and satisfactory basis. The urgency of the subject does not grow out of any large present demand for the use of these lands for agriculture, but out of the danger that the water supply and the sites for the necessary catch basins may fall into the hands of individuals or private corporations and be used to render subservient the large areas dependent upon such supply. The owner of the water is the owner of the lands, however the titles may run. All unappropriated natural water sources and all necessary reservoir sites should be held by the Government for the equal use, at fair rates, of the homestead settlers who will eventually take up these lands.

The United States should not, in my opinion, un-

dertake the construction of dams or canals, but should limit its work to such surveys and observations as will determine the water supply, both surface and subterranean, the areas capable of irrigation, and the location and storage capacity of reservoirs. This done, the use of the water and of the reservoir sites might be granted to the respective States or Territories, or to individuals or associations, upon the condition that the necessary works should be constructed and the water furnished at fair rates, without discrimination, the rates to be subject to supervision by the legislatures, or by boards of water commissioners duly constituted. The essential thing to be secured is the common and equal use at fair rates of the accumulated water supply. It were almost better that these lands should remain arid than that those who occupy them should become the slaves of unrestrained monopolies controlling the one essential element of land values and crop results.

The use of the telegraph by the Post-office Department as a means for the rapid transmission of written communications is, I believe, upon proper terms quite desirable. The Government does not own or operate the railroads, and it should not, I think, own or operate the telegraph lines. It does, however, seem to be quite practicable for the Government to contract with the telegraph companies, as it does with the railroad companies, to carry at specified rates such communications as the senders may designate for this method of transmission. I recommend that such legislation be enacted as will enable the Post-office Department fairly to test by experiment the advantages of such a use of the telegraph.

If any intelligent and loyal company of American citizens were required to catalogue the essential human conditions of national life, I do not doubt that with absolute unanimity they would begin with "free and honest elections." And it is gratifying to know that generally there is a growing and nonpartisan demand for better election laws. But against this sign of hope and progress must be set the depressing and undeniable fact that election laws and methods are sometimes cunningly contrived to secure minority control, while violence completes the shortcomings of fraud.

In my last annual message I suggested that the development of the existing law providing a Federal supervision of congressional elections offered an effective method of reforming these abuses. The need of such a law has manifested itself in many parts of the country, and its wholesome restraints and penalties will be useful in all. The constitutionality of such legislation has been affirmed by the Supreme Court. Its probable effectiveness is evidenced by the character of the opposition that is made to it. It has been denounced as if it were a new exercise of Federal power and an invasion of the rites of the States. Nothing could be further from the truth. Congress has already fixed the time for the election of members of Congress. It has declared that votes for members of Congress must be by written or printed ballot; it has provided for the appointment by the circuit court in certain cases, and upon the petition of a certain number of citizens, of election supervisors, and made it their duty to supervise the registration of voters conducted by the State officers; to challenge persons offering to register; to personally inspect and scrutinize the registry lists, and to affix their names to the lists for the purpose of identification and the prevention of frauds; to attend at elections and remain with the boxes till the votes are all cast and counted; to attach to the registry lists and election returns any statement touching the accuracy and fairness of the registry and election, and to take and transmit to the Clerk of the House of Representatives any evidence of fraudulent practices which may be presented to them. The same law provides for the appointment of deputy United States marshals to attend at the polls, support the supervisors in the discharge of their duties, and to arrest persons violating the election laws. The provisions of this

familiar title of the Revised Statutes have been put into exercise by both the great political parties, and in the North as well as in the South, by the filing with the court of the petitions required by the law.

It is not, therefore, a question whether we shall have a Federal election law, for we now have one, and have had for nearly twenty years, but whether we shall have an effective law. The present law stops just short of effectiveness, for it surrenders to the local authorities all control over the classification which establishes the *prima facie* right to a seat in the House of Representatives. This defect should be cured. Equality of representation and the parity of the electors must be maintained, or everything that is valuable in our system of government is lost. The qualifications of an elector must be sought in the law, not in the opinions, prejudices, or fears of any class, however powerful. The path of the elector to the ballot box must be free from the ambush of fear and the enticements of fraud; the count so true and open that none shall gainsay it. Such a law should be absolutely nonpartisan and impartial. It should give the advantage to honesty and the control to majorities. Surely there is nothing sectional about this creed, and, if it shall happen that the penalties of laws intended to enforce these rights fall here and not there, it is not because the law is sectional, but because, happily, crime is local and not universal. Nor should it be forgotten that every law, whether relating to elections or to any other subject, whether enacted by the State or by the nation, has force behind it; the courts, the marshal or constable, the *posse comitatus*, the prison, are all and always behind the law.

One can not be justly charged with unfriendliness to any section or class who seeks only to restrain violations of law and of personal right. No community will find lawlessness profitable. No community can afford to have it known that the officers who are charged with the preservation of the public peace and the restraint of the criminal classes are themselves the product of fraud or violence. The magistrate is then without respect and the law without sanction. The floods of lawlessness can not be leaved and made to run in one channel. The killing of a United States marshal carrying a writ of arrest for an election offense is full of prompting and suggestion to men who are pursued by a city marshal for a crime against life or property.

But it is said that this legislation will revive race animosities, and some have even suggested that when the peaceful methods of fraud are made impossible they may be supplanted by intimidation and violence. If the proposed law gives to any qualified elector, by a hair's weight, more than his equal influence, or detracts by so much from any other qualified elector, it is fatally impeached. But if the law is equal and the animosities it is to evoke grow out of the fact that some electors have been accustomed to exercise the franchise for others as well as for themselves, then these animosities ought not to be confessed without shame, and can not be given any weight in the discussion without dishonor. No choice is left to me but to enforce with vigor all laws intended to secure to the citizen his constitutional rights, and to recommend that the inadequacies of such laws be promptly remedied. If to promote with zeal and ready interest every project for the development of its material interests, its rivers, harbors, mines, and factories, and the intelligence, peace, and security under the law of its communities and its homes, is not accepted as sufficient evidence of friendliness to any State or section, I can not add connivance at election practices that not only disturb local results, but rob the electors of other States and sections of their most priceless political rights.

The preparation of the general appropriation bills should be conducted with the greatest care and the closest scrutiny of expenditures. Appropriations should be adequate to the needs of the public service, but they should be absolutely free from prodigality.

I venture again to remind you that the brief time remaining for the consideration of the important legislation now awaiting your attention offers no margin for waste. If the present duty is discharged with diligence, fidelity, and courage, the work of the Fifty-first Congress may be confidently submitted to the considerate judgment of the people.

BENJ. HARRISON.

EXECUTIVE MANSION, Dec. 1, 1890.

The Direct-Tax Bill.—This much discussed measure was finally disposed of. It had passed the Senate the first session of this Congress, and the House took it up and passed it Feb. 24, 1891, amended as follows:

A bill to credit and pay to the several States and Territories and the District of Columbia all moneys collected under the direct tax levied by the act of Congress approved Aug. 5, 1861.

Be it enacted, etc., That it shall be the duty of the Secretary of the Treasury to credit to each State and Territory of the United States and the District of Columbia a sum equal to all collections by setoff or otherwise made from said States and Territories and the District of Columbia, or from any of the citizens or inhabitants thereof or other persons, under the act of Congress approved Aug. 5, 1861, and the amendatory acts thereto.

SEC. 2. That all moneys still due to the United States on the quota of direct tax apportioned by section 8 of the act of Congress approved Aug. 5, 1861, are hereby remitted and relinquished.

SEC. 3. That there is hereby appropriated, out of any money in the Treasury not otherwise appropriated, such sums as may be necessary to reimburse each State, Territory, and the District of Columbia for all money found due to them under the provisions of this act; and the Treasurer of the United States is hereby directed to pay the same to the governors of the States and Territories and to the commissioners of the District of Columbia, but no money shall be paid to any State or Territory until the Legislature thereof shall have accepted by resolution the sum herein appropriated and the trust imposed, in full satisfaction of all claims against the United States on account of the levy and collection of said tax, and shall have authorized the governor to receive such money for the use and purposes aforesaid. *Provided,* That where the sums or any part thereof, credited to any State, Territory, or the District of Columbia, have been collected by the United States from the citizens or inhabitants thereof, or any other person, either directly or by sale of property, such sums shall be held in trust by such State, Territory, or the District of Columbia for the benefit of those persons or inhabitants from whom they were collected, or their legal representatives: *And provided further,* That no part of the money collected from individuals and to be held in trust as aforesaid shall be retained by the United States as a setoff against any indebtedness alleged to exist against the State, Territory, or District of Columbia in which such tax was collected: *And provided further,* That no part of the money hereby appropriated shall be paid out by the governor of any State or Territory or any other person to any attorney or agent under any contract for services now existing or heretofore made between the representative of any State or Territory and any attorney or agent. All claims under the trust hereby created shall be filed with the governor of such State or Territory and the commissioners of the District of Columbia, respectively, within six years next after the passage of this act; and all claims not so filed shall be forever barred, and the money attributable thereto shall belong to such State, Territory, or the District of Columbia, respectively, as the case may be.

SEC. 4. That it shall be the duty of the Secretary of the Treasury to pay to such persons as shall in each case apply therefor, and furnish satisfactory evidence that such applicant was at the time of the sales

hereinafter mentioned the legal owner, or is the heir at law or devisee of the legal owner of such lands as were sold in the parishes of St. Helena and St. Luke's in the State of South Carolina, under the said acts of Congress, the value of said lands in the manner following, to wit: To the owners of the lots in the town of Beaufort, one half of the value assessed thereon for taxation by the United States direct-tax commissioners for South Carolina; to the owners of lands which were rated for taxation by the State of South Carolina as being usually cultivated, \$5 per acre for each acre thereof returned on the proper tax book; to the owners of all other lands, \$1 per acre for each acre thereof returned on said tax book: *Provided,* That in all cases where such owners, or persons claiming under them, have redeemed or purchased said lands, or any part thereof, from the United States, they shall not receive compensation for such part so redeemed or purchased; and any sum or sums held or to be held by the said State of South Carolina in trust for any such owner under section 3 of this act shall be deducted from the sum due to such owner under the provision of this section: *And provided further,* That in all cases where said owners have heretofore received from the United States the surplus proceeds arising from the sale of their lands, such sums shall be deducted from the sum which they are entitled to receive under this act. That in all cases where persons, while serving in the army or navy or marine corps of the United States, or who had been honorably discharged from said service, purchased any of said lands under section 11 of the act of Congress approved June 7, 1862, and such lands afterward reverted to the United States, it shall be the duty of the Secretary of the Treasury to pay to such persons as shall in each case apply therefor, or to their heirs at law, devisees, or grantees, in good faith and for valuable consideration, whatever sum was so paid to the United States in such case. That before paying any money to such persons the Secretary of the Treasury shall require the person or persons entitled to receive the same to execute a release of all claims and demands of every kind and description whatever against the United States arising out of the execution of said acts, and also a release of all right, title, and interest in and to the said lands. That there is hereby appropriated, out of any money in the Treasury not otherwise appropriated, the sum of \$500,000 or so much thereof as may be necessary to pay for said lots and lands, which sums shall include all moneys in the Treasury derived in any manner from the enforcement of said acts in said parishes, and not otherwise appropriated. That section 1063 of the Revised Statutes is hereby made applicable to claims arising under this act without limitation as to the amount involved in such claim: *And provided further,* That any sum or sums of money received into the Treasury of the United States from the sale of lands bid in for taxes in any State under the laws described in the first section of this act in excess of the tax assessed thereon shall be paid to the owners of the land so bid in and resold, or to their legal heirs or representatives.

The amounts levied, collected, and remaining unpaid under the direct-tax law were given as shown in the table on the next page.

To these estimates should be added the sum of \$500,000 to carry out the provisions of section 4 of the bill.

The following was the vote on the passage of the bill:

YEAS—Adams, Allen of Michigan, Anderson of Kansas, Arnold, Atkinson of Pennsylvania, Atkinson of West Virginia, Baker, Banks, Bayne, Belden, Belknap, Bergen, Biggs, Bingham, Bliss, Boothman, Boutelle, Bowden, Brewer, Brosius, Brower, Brown of Virginia, J. B. Brown, Buchanan of New Jersey, Burton, Caldwell, Campbell, Cannon, Carter, Caswell, Cheadle, Cheatham, Clark of Wyoming, Cogswell, Coleman, Comstock, Cooper of Indiana, Cuth-

STATES.	Amount levied.	Amount collected and to be refunded.	Fifteen per cent commission allowed.	Balance due to be canceled.
Alabama.....	\$529,818 88	\$22,520 24	.....	\$506,798 09
Arkansas.....	261,888 00	154,701 18	.....	107,184 82
California.....	254,838 67	222,955 41	\$31,593 26	.....
Colorado.....	22,905 88	22,189 96	.....	715 87
Connecticut.....	308,214 00	261,981 90	46,232 10	.....
Dakota.....	8,241 88	8,241 88	.....	.....
Delaware.....	74,688 38	70,392 98	4,350 00	.....
District of Columbia.....	49,487 28	49,487 33	.....	72,756 41
Florida.....	77,522 67	4,766 26	.....	466,884 44
Georgia.....	584,367 38	117,982 89	.....	.....
Illinois.....	1,146,551 88	974,568 68	171,982 70	.....
Indiana.....	904,875 38	769,144 09	135,781 80	.....
Iowa.....	452,088 00	884,374 80	67,818 20	.....
Kansas.....	71,743 38	60,951 82	10,761 50	.....
Kentucky.....	718,695 88	606,641 02	107,054 80	.....
Louisiana.....	885,886 67	885,886 67	.....	.....
Maine.....	420,826 00	837,702 10	.....	.....
Maryland.....	486,823 38	871,299 88	59,523 50	.....
Massachusetts.....	524,581 83	700,864 14	123,687 19	.....
Michigan.....	501,766 83	426,498 82	75,264 50	.....
Minnesota.....	108,524 00	92,245 00	16,278 00	.....
Mississippi.....	418,084 67	113,824 06	.....	299,760 01
North Carolina.....	576,194 67	877,452 01	.....	198,742 06
South Carolina.....	863,570 67	222,396 36	.....	141,174 81
Missouri.....	761,127 88	646,955 20	114,169 10	.....
Nebraska.....	19,812 00	19,812 00	.....	.....
Nevada.....	4,592 67	3,908 77	688 90	.....
New Hampshire.....	218,406 67	185,645 67	32,761 00	.....
New Jersey.....	450,184 00	882,614 88	67,519 17	.....
New Mexico.....	62,648 00	62,648 00	.....	.....
New York.....	2,608,918 67	2,213,380 56	399,587 81	.....
Ohio.....	1,567,089 88	1,382,025 98	285,060 40	.....
Oregon.....	85,140 67	29,569 57	5,271 10	.....
Pennsylvania.....	1,946,719 88	1,654,711 43	292,007 90	.....
Rhode Island.....	116,968 67	99,419 11	17,544 56	.....
Tennessee.....	669,498 00	892,004 48	.....	277,498 52
Texas.....	856,106 67	150,841 51	.....	174,265 16
Utah.....	26,982 00	.....	.....	26,982 00
Vermont.....	211,068 00	179,407 80	81,660 20	.....
Virginia.....	729,071 02	442,498 09	.....	256,662 93
West Virginia.....	208,479 65	181,306 98	27,172 72	.....
Washington.....	7,755 88	4,268 16	.....	3,487 17
Wisconsin.....	519,688 67	446,586 41	73,158 26	.....
Total.....	.....	\$15,227,632 08	\$2,206,985 67	\$2,562,401 29

ran, Covert, Culbertson of Pennsylvania, Cutcherson, Dalzell, Darlington, De Lano, Dibble, Dingley, Doliver, Dorsey, Dunnell, Evans, Farquhar, Finley, Flick, Flower, Gear, Gest, Gibson, Gifford, Greenhulge, Grosvenor, Grout, Hall, Hanksbrough, Harmer, Haugen, E. R. Hays, Haynes, Heard, Hemphill, Henderson of Illinois, Henderson of North Carolina, Hitt, Holman, Hopkins, Houk, Kennedy, Ketcham, Kinsey, Knapp, Lacey, Laidlaw, Langston, Lansing, Laws, Lee, Lehlbach, Lester of Georgia, Lind, Lodge, Mansur, Martin of Indiana, Mason, McClellan, McComas, McCord, McCormick, McDuffie, McKenna, McKinley, Miles, Miller, Milliken, Moffitt, Moore of New Hampshire, Morey, Morrow, Morse, Mudd, Niedringhaus, Nute, O'Donnell, O'Ferrall, O'Neill of Indiana, O'Neill of Pennsylvania, Osborne, Outhwaite, Owen of Indiana, Owens of Ohio, Parrett, Payne, Paynter, Payson, Perkins, Perry, Pindar, Post, Pugsley, Raines, Ray, Royburn, Rife, Rockwell, Rowell, Russell, Sanford, Scranton, Seull, Seney, Sherman, Smith of Illinois, Smith of West Virginia, Smyser, Snider, Spooner, Stephenson, Stivers, Stockbridge, Stone of Pennsylvania, Struble, Taylor of Illinois, Taylor of Tennessee, E. B. Taylor, J. D. Taylor, Thomas, Thompson, Tillman, Townsend of Colorado, Townsend of Pennsylvania, Turner of New York, Vandever, Van Schaick, Waddill, Wade, Walker, Wallace of Massachusetts, Wallace of New York, Wheeler of Michigan, Wickham, Wiley, Williams of Ohio, Wilson of Kentucky, Yardley—172.

NAVS—Abbott, Anderson of Mississippi, Andrew, Bankhead, Barnes, Bland, Blount, Boutner, Breckenridge of Arkansas, Brookshire, Buchanan of Virginia, Bunn, Bynum, Candler of Georgia, Carlton, Caruth, Catehings, Chipman, Clements, Clunie, Cobb, Cowles, Crain, Crisp, Culbertson of Texas, Cummings, Dargan, Davidson, Dickerson, Dockery, Dunphy, Ellis, Fith-

ian, Forman, Forney, Fowler, Funston, Geissenhainer, Goodnight, Grimes, Hare, Hatch, W. I. Hayes, Herbert, Hill, Hooker, Kelley, Kerr of Iowa, Kerr of Pennsylvania, Lane, Lanham, Lawler, Lester of Virginia, Lewis, Martin of Texas, McAdoo, McClammy, McCreary, McRae, Mills, Montgomery, Morgan, Morrill, Mutchler, Norton, Oates, O'Neil of Massachusetts, Peel, Pennington, Peters, Pierce, Price, Quinn, Reilly, Richardson, Robertson, Rogers, Sayers, Shively, Skinner, Spinola, Springer, Stewart of Texas, Stewart of Vermont, Stockdale, Stone of Kentucky, Stone of Missouri, Sweney, Tucker, Turner of Georgia, Turner of Kansas, Vaux, Washington, Whitelaw, Whiting, Wike, Willcox, Williams of Illinois, Wilson of Missouri, Wilson of Washington, Wilson of West Virginia—101.

Nor VOTING—Alderson, Allen of Mississippi, Bartine, Barwig, Beckwith, Blanchard, Breckinridge of Kentucky, Brickner, T. M. Browne, Brunner, Buckalew, Bullock, Burrows, Butterworth, Candler of Massachusetts, Clancy, Clarke of Alabama, Clark of Wisconsin, Connell, Cooper of Ohio, Craig, Edmunds, Enloe, Ewart, Featherston, Fitch, Flood, Frank, Geary, Henderson of Iowa, Hermann, Kilgore, La Follette, Magner, Maish, McMillin, Moore of Texas, Pickler, Quackenbush, Randall, Reed of Iowa, Rowland, Rusk, Sawyer, Simonds, Stahlnecker, Stewart of Georgia, Stump, Sweet, Tarsney, Tracey, Wheeler of Alabama, Whitthorne, Wilkinson, Wright, Yoder—56.

The Senate concurred on the House amendment, Feb. 27, 1891, and the President approved of the measure March 2, 1891.

Circuit Court of Appeals.—At the first session of this Congress the House passed a bill "to define and regulate the jurisdiction of the courts of the United States," the purposes of which was

to relieve the Supreme Court by the creation of a circuit court of appeals. The Senate passed the House bill with amendments, and a conference committee agreed upon a report concurring in the Senate amendments. This report was adopted Feb. 27, 1891.

In the discussion of it Mr. Rogers, of Arkansas, said:

"No member upon the floor of the House, I think, has been a more earnest advocate of a reorganization of the Federal judiciary system, and the remuneration of its judges, than I have during the past eight years of my congressional life; so that the observations I shall now make I make from the most friendly standpoint to the object sought to be attained by legislation on this subject.

"The primary motive, or rather the primary consideration or object of legislation upon this point, was to relieve the Supreme Court of the United States, whose docket is now congested by some seventeen hundred cases, or more, perhaps, than four years of consecutive work if no other business was added to it. I say that was the primary object. Incidental to that object were two other objects. One was the divorcement of the district from the circuit courts and the divorcement of the Supreme Court from the inferior courts; in other words, that we should have a system rather than a medley; that the great reservoir of original jurisdiction should rest in the district courts of the United States; that the circuit courts should be abolished and an intermediate court of appeals established between the district courts and the Supreme Court, whose appellate jurisdiction should be final, and thereby limit the appellate jurisdiction of the Supreme Court and give it consequent relief.

"I am sorry to say this conference report defeats all of these objects; every single one of them. As I said, there are now seventeen hundred cases, or somewhere between fifteen and seventeen hundred cases, on the Supreme Court docket. By the terms of this bill every one of these cases will remain on that docket to be finally determined; and that court will have to do four years of consecutive hard work to get rid of the docket now pending in that court.

"This is not only true, but here, by the terms of this bill, the congestion of the docket is to be intensified to an extent that no one of us can foresee at this time. By the terms of the fifth section of the bill appeals are granted from the district and circuit courts of the United States in all cases of capital or other infamous crimes.

"An infamous crime has been decided by the Supreme Court of the United States to be any offense which may be punished by imprisonment at hard labor in the penitentiary. The effect of this provision of the bill will be to extend the appellate jurisdiction of the Supreme Court of the United States over almost the entire criminal code of the United States, involving a large number of internal-revenue cases; involving a large number of felonies from the district courts at Fort Smith, Ark., and at Paris, Texas., and other courts exercising exclusive jurisdiction over certain defined territory of the United States. It likewise will embrace almost all the violations of the postal service. It will

likewise embrace a very large number of counterfeiting cases.

"From every Federal tribunal in this country these infamous offenses may be taken by writs of error to the Supreme Court of the United States. Therefore, not only is the primary consideration for which legislation was sought defeated, but the evil which was attempted to be remedied is intensified, I think I am safe in saying, by at least from three hundred to one thousand cases annually which will be carried to the Supreme Court of the United States from this great domain over which it has never heretofore exercised any appellate jurisdiction. The result will be that, independent of the civil cases which have the right of appeal or writ of error from the district and circuit courts of the United States to the Supreme Court under the terms of the bill, and in which field the number of cases is greatly diminished by the bill, this new criminal appellate jurisdiction which is imposed upon the Supreme Court will more than overbalance the number of cases which are cut off by the creation of the intermediate courts of appeal. I think I have made that point clear, or, if I have not, I have been unfortunate.

"A vice of the present organization of the Federal judicial system is that there are eight circuit judges exercising original jurisdiction, and exclusive jurisdiction almost, over the great domain of civil litigation of all classes and kinds. These eight circuit judges are compelled, in the discharge of their duties, to gallop all over the country, consuming a large proportion of their time in travel. To illustrate, take the eighth circuit, composed of Nebraska, Minnesota, Iowa, Missouri, Kansas, Arkansas, and North and South Dakota, all this vast domain, extending almost from the Gulf to Canada, is now in one circuit presided over by a single circuit judge, and of course his time was very largely absorbed in travel while his duties were discharged by the district judges.

"Now, our bill sought to abolish the circuit courts as courts of original jurisdiction and thereby get rid of that evil, and confer all original jurisdiction on the district courts; then add one or more circuit judges to each circuit, and organize with these circuit judges one circuit court of appeals with appellate jurisdiction; but this bill intensifies the evil by assigning two circuit judges to each circuit to do the same kind of service, and gallop all over the country in the old way. To illustrate further the vice of this system, I think I speak within bounds when I say as to the four courts in my own State that no circuit judge or associate justice of the Supreme Court of the United States has ever appeared at any of them but one; and I think I may safely add that no circuit judge and no associate justice of the Supreme Court ever in his life, at any one time, spent more than two weeks in the State, and sometimes they do not go there for one, two, or three years. The fact is, that the whole circuit-court system as organized now and as proposed by this bill is vicious and a failure.

"But I now invite your attention to another vice in this system. These nine intermediate appellate courts are organized by this bill, and their first terms are to be held at such times as the court may appoint; but when these nine

courts meet in their nine respective places there will not be a single case upon their docket to be tried. These great tribunals, with all the dignity of the supreme court of a great State, are organized and directed to go to hold court, and not a case to be heard in any one of them, and this, too, when 1,700 cases are on the Supreme Court docket, three fourths of which should be certified to them for trial; but there is no provision on this bill that those cases which by the terms of the bill itself in future shall go to these tribunals by writ of error or appeal shall be certified down their for immediate consideration.

"Then by the terms of this bill there are created nine additional officers—marshals of the United States. There is no necessity whatever for the appointment of a single additional marshal, because the marshals already authorized where these courts are held could discharge every duty required by the terms of this bill. That, however, is a defect that may readily be cured.

"And while I make these objections to the bill, candor compels me to say that I think the only exigency which would have compelled the majority of the House to condescend to consent to this bill is the fact that the parliamentary status and business of the two Houses is such that it was thought impossible otherwise to get through a bill of any description; and, secondly, because the vices which I have pointed out are of such a character as will compel Congress in a short time to adopt three or four amendments such as I have suggested for the purpose of securing the relief which was the only motive and almost the sole purpose of the legislation sought.

"I have now, in the brief time allowed me, tried to point out the reasons which compelled me to dissent from this conference report, and which will induce me to vote against it. In short, and finally, the bill gives no relief to the Supreme Court now, and it is exceedingly doubtful whether in its present condition it ever will. Indeed, it is probable that it will result in an increase of its already overburdened docket.

"Second, it perpetuates the vice of the present system in not abolishing the circuit courts, as courts of original jurisdiction, and condemns eighteen instead of nine circuit judges to a life of travel rather than a life of judicial usefulness.

"Third, it makes the circuit courts of appeal, instead of being organized, stable, and independent tribunals, with one set of judges each—it makes of them courts whose judges are constantly shifting and changing, because no judge can sit in the trial of any cause in the circuit court of appeals wherein he had presided in the court below, whether he be a circuit or district judge.

"Fourth, it does not disassociate the Chief Justice and associate justices of the Supreme Court of the United States from the circuit court work.

"Fifth, it converts our great constitutional court, the Supreme Court of the United States, into an appellate court to try not capital cases only, but criminal cases of almost every class, except misdemeanors of the lowest grades.

"Finally, it provides for nine United States marshals, for whom there is no earthly use. If these evils were corrected, I would, from a sense of profound duty, even at the sacrifice of parting

company with my political associates, support and vote for this measure. As the bill is now constructed I would not vote for it under any circumstances, believing it is better to have no legislation rather than legislation which, while it corrects some evils, intensifies others and fails utterly to correct the one primarily sought to be corrected, and concerning which the complaints are general, severe, and of long standing—namely, relief for the Supreme Court of the United States."

Mr. Culberson, of Texas, said:

"Mr. Speaker, the House bill relieved the judges of the Supreme Court of duty in circuit courts, thus enabling them to devote their entire time to the business in the Supreme Court.

"The circuit court of appeals consisted of three circuit court judges in each circuit, and was required to hold one term in each year at a place designated in each circuit.

"If for any reason a quorum of the court should fail to attend, it was provided that a district judge or judges might be assigned to this duty.

"This plan of reorganization provided for a review of every civil case and of nearly every criminal case which might be tried in the court of original jurisdiction, either by the circuit court of appeals or by the Supreme Court, and in some cases by both.

"This secured to every litigant the right to have his case reviewed by a court of last resort, and thus overthrew the judicial despotism we have been accustomed to in some sections of the country.

"In respect to the relief of the Supreme Court, I may say that the division of the appellate jurisdiction now exercised by the Supreme Court and the new appellate jurisdiction created by the bill was made substantially upon this basis: All cases tried in the court of original jurisdiction might be reviewed in the circuit court of appeals, and if there should be no Federal question involved (as if jurisdiction should have been acquired by the court of original jurisdiction upon the ground of citizenship) the judgment of the court of appeals should be final, but if a Federal question was involved the judgment of the circuit court of appeals might be reviewed by the Supreme Court.

"I propose to support the Senate amendment, not because I prefer the plan proposed by the Senate to that proposed by the House, but for the reasons which induced me to support the House bill. The same objects and results sought to be attained by the House proposition are secured by the Senate amendment.

"A moment now as to the scheme of relief proposed by this amendment. It provides for the appointment of only nine circuit judges. A circuit court of appeals is created in each circuit. It consists of a judge of the Supreme Court and two circuit judges. It is required to hold one term each year at a place designated in the circuit. The appellate jurisdiction is divided between these courts of appeal, as shown by the following synopsis of the bill:

7. It provides for appeals from the district courts and from the circuit courts direct to the Supreme Court in the following instances only:

a. Where a question of jurisdiction is raised;

- b. Final decrees in prize causes;
- c. Cases of crime punishable by death;
- d. Cases involving the construction or application of the Constitution of the United States, but not in cases involving the construction or application of acts of Congress;
- e. Cases in which the constitutionality (only) of any law of the United States, or the validity or construction of a treaty, is drawn into question;
- f. In cases in which the law of a State is claimed to be in contravention of the Constitution of the United States.
8. It leaves the jurisdiction of the Supreme Court in respect of cases brought from the highest court of a State, as the law now is.
9. It gives the court of appeals jurisdiction to review decisions of the district and circuit courts in all other cases.
10. It provides that the judgments of the court of appeals shall be final in all cases—
 - (a) In which the jurisdiction is dependent upon the character of the suitors, as citizens or aliens;
 - (b) In cases arising under the patent laws;
 - (c) In cases under the revenue laws;
 - (d) In cases under the criminal laws; and
 - (e) In admiralty cases other than prize.
11. It authorizes the court of appeals to certify to the Supreme Court questions of law.
12. It authorizes the Supreme Court in the cases last mentioned to review the whole case.
13. It also authorizes the Supreme Court to require the court of appeals to send up for consideration any case pending therein.
14. In all other cases in the court of appeals it authorizes an appeal to the Supreme Court from the court of appeals when the matter in controversy exceeds \$1,000.

These are the broad and leading features of the legislation proposed by the majority of the committee.

It will be seen from the foregoing that in general the Supreme Court of the United States is excluded from reviewing—

- I. Cases in which the jurisdiction of the national courts depends upon the character of suitors.
- II. All cases arising under the patent laws.
- III. All cases under the revenue laws.
- IV. All cases under the criminal laws.
- V. All admiralty cases other than prize.

"It will be seen from this statement that the division of labor between these courts and the Supreme Court is better arranged and less expensive to litigants than that proposed in the House measure.

"There is no restriction upon the right of review, and in my judgment there is no question of the efficiency of the plan to give ample relief to the court.

"My colleague on the committee thinks that the failure to incorporate in this amendment a provision to remove the causes now pending in the Supreme Court of which the circuit court of appeals would have jurisdiction under this bill to the proper circuit court of appeals was a grave mistake, and will result in postponing the relief sought to be given the Supreme Court by this measure.

"I concur in that opinion and believe that it was a grave mistake, and I have no doubt that Congress will rectify it as soon as practicable.

"Mr. Speaker, in respect to the objection to the provision which secures a defendant in a case of conviction of a capital or otherwise infamous crime an appeal direct to the Supreme Court of the United States, I desire to say that I believe that a more meritorious provision could not be inserted in this measure.

"If there is any class of judgments which de-

serve a higher and greater consideration than another, it seems to me that a judgment which takes life or liberty falls within it.

"It is true, Mr. Speaker, that this measure, if it should become the law, will require the appointment of nine circuit judges by this Administration.

"But I take it that the true question is, not whether this necessary judicial force is to be furnished from the Republican party or the Democratic party, or both combined, but, is it needed?

"Shall the demand of the bar of the United States, without regard to party, be ignored? Shall the best interests of the country, so long outraged and disgraced by the law's delays, continue to be neglected because the President of the United States may fill these places with his party friends?

"So far as I am concerned, I yield to what I believe to be the best interests of the country, without regard to party. Regretting sincerely to differ with Democratic colleagues on the committee, I shall vote for this conference report."

On March 3, 1891, the President approved of the measure.

Salaries of District Judges.—On Feb. 14, 1891, the House passed a bill, previously passed by the Senate, "fixing the salaries of the several judges of the United States district courts at \$5,000 per annum." The considerations in favor of the measure are thus presented in the report of the House Judiciary Committee:

Justices of the Supreme Court.—The salaries of the justices of the Supreme Court were first fixed by act of Sept. 23, 1789, at the sum of \$4,000 for the Chief Justice and \$3,500 for the associate justices. Feb. 20, 1819, they were changed to the sum of \$5,000 for the Chief Justice and \$4,000 for the associate justices. March 3, 1855, they were again raised to \$6,500 and \$6,000; March 3, 1871, to \$8,500 and \$8,000; and March 3, 1873, to \$10,500 and \$10,000, at which amount they have ever since remained.

These justices stay in Washington continuously from October to May each year, and not a little is expected of them socially. The expenses of living in Washington have steadily increased for some time. Rents, real estate, and living expenses generally are high there. Besides, as before stated, the justices of the Supreme Court do more or less circuit work in their respective circuits each summer, and have traveling expenses then to meet.

On Sept. 1, 1857, Associate-Justice Benjamin Robbins Curtis, of Boston, tendered his resignation as such justice to the President, and it was accepted. In letters to his friends he stated that his main reason for doing so was that the salary was so small—it was then \$6,000—he could not support his family in Washington without expending, in addition to his salary, his entire private income, and that he did not deem it his duty to do so.

After his resignation he entered at once upon the practice of his profession, and was so engaged until his death. His brother, Mr. George Ticknor Curtis, of New York, in his biography of the ex-justice, says that his aggregate professional receipts from the time of his resignation until his death, a period of nearly seventeen years, were about \$650,000. This would make an average annual income of a little over \$38,000. But even that is not so large an income as many lawyers of the country have received during the time that has elapsed since Justice Curtis's death and are now receiving.

Circuit Judges.—The act providing for the appointment of circuit judges fixed their salary at the sum of \$6,000, and it has not been changed. These

judges have laborious duties to perform and matters of great importance and magnitude submitted to them for adjudication. They have to hold court in the various districts in their respective circuits. The first circuit embraces four States, the second three, the third three, the fourth three, the fifth six, the sixth four, the seventh three, the eighth seven, and the ninth three. In several of the States there are two districts, and in some three. Most of these judges, therefore, have to travel a good deal and to be away from home the larger part of the time on expense.

Since provision was made for their appointment, two at least, Judges Dillon and McCreary, of the eighth circuit, have resigned on account of the salary being so small. Both were men of the highest standing and ability and able judges. The former is in New York and the latter in Kansas City. Both are engaged in practice, and undoubtedly have an income much larger than the salary of a circuit judge. Judge Lowell, of the first circuit, has also resigned and resumed practice in Boston. He was also an able judge. He did not resign perhaps on account of the small salary, as at the time of his resignation he is understood to have been in independent circumstances, but he undoubtedly felt that he was entitled to a respite from heavy work.

By act of Congress passed March 3, 1887, provision was made for the appointment of a second circuit judge in the second circuit, composed of the States of Vermont, New York, and Connecticut, and soon thereafter the Hon. E. Henry Lacombe was appointed to the place. He qualified and entered upon the duties of his office in June of that year, so that now there is a senior and a junior circuit judge in that circuit.

District Judges.—The judiciary act of September, 1789, provided for thirteen district courts, with a judge in each district, and fixed the salaries of the judges at from \$800 to \$1,500. These districts have been increased in number, so that now there are fifty-eight. The salaries of these judges have also been increased. At the present time one of these judges receives \$5,000, one \$4,500, eleven \$4,000 each, and the remaining forty-five \$3,500 each. The one receiving \$5,000 is Judge Hoffman, of San Francisco. The one receiving \$4,500 is Judge Billings, of New Orleans. The eleven receiving \$4,000 are Judges Blodgett of Chicago, Norris of Baltimore, Nelson of Boston, Nixon of Trenton, Brown of New York, Benedict of Brooklyn, Cox of Utica, Sage of Cincinnati, Butler of Philadelphia, Ahleson of Pittsburg, and Ross of Los Angeles.

These judges usually work only in their respective districts, but in many of these districts court is now held in two different places, and in some of them in three, so that these judges also are obliged to be away from home considerably on expense. These judges, besides holding district court, also hold circuit court in the absence of the circuit judge, and in some of the circuits do perhaps as much or more of the circuit work than the circuit judge does, as in some of the circuits it is not possible for the circuit judge to get into each district more than twice a year, and then not for a long time.

In addition to the foregoing salaries, all of these judges are now allowed to retire after ten years of service and after reaching the age of seventy years, upon the salary they have been receiving, and to draw it as long as they live.

There are now nine Federal judges living who have retired and are receiving their salary. Justice Strong, of the Supreme Court; Circuit Judge Drummond; District Judges Erskine, Bryan, and Treat; Judges Loring and Drake, of the Court of Claims; and Judges Wylie and McArthur, of the Supreme Court of the District of Columbia.

It should be said also that all these appointments are for life or during good behavior, and that in that respect the terms of the Federal judges differ from most, and perhaps all, of those of the judges of our State courts.

For purposes of comparison and at some trouble I

have ascertained the amount of salaries paid to the judges of the courts of England and some of her colonies, and to the judges of the courts in the States of this country where the salary equals or exceeds the lowest amount paid to our Federal district judges, which I give below.

In England the Lord Chancellor receives a salary of £10,000, the lords of appeal in ordinary £6,000 each. In the Supreme Court of Judicature, the master of the rolls receives £6,000, and the lords justices £5,000 each. In the High Court of Justice, the justices receive £5,000 each. In the Queen's Bench, the Lord Chief Justice of England receives £8,000, and the justices, fourteen in number, £5,000 each. In the Probate and Admiralty Courts and the Court of Arches, the judges receive £5,000 each. In the city courts of London, in the Lord Mayor's Court, the judges receive £3,500 each. In the City of London Court, £2,400 each, and in the county courts in the neighborhood of the metropolis, £1,500 each.

The measure was approved by the President on Feb. 21.

International Copyright.—On Dec. 3, 1890, the House passed an international copyright bill. Among the provisions was a prohibition against the importation of copyrighted books, except two copies for use on special permission to the importer from the owner of the copyright in this country. There was also a provision against importing more than two copies of any magazine or newspaper. In the Senate the House bill was amended in some respects, the most important changes being on these two points. The Senate amendments provided for the importation of foreign-made books, like other articles, on the payment of duty, and also provided for the importation of foreign periodicals. The bill as amended passed the Senate Feb. 18, 1891. A conference committee was appointed, and after some delay and discussion an agreement was reached and a report made, March 2, in favor of the bill in the following form, the House accepting the less important Senate amendments and a compromise being reached on the more important ones:

Be it enacted, etc., That section 4952 of the Revised Statutes be, and the same is hereby, amended so as to read as follows:

"SEC. 4952. The author, inventor, designer, or proprietor of any book, map, chart, dramatic or musical composition, engraving, cut, print, or photograph or negative thereof, or of a painting, drawing, chromo, statue, statuary, and of models or designs intended to be perfected as works of the fine arts, and the executors, administrators, or assigns of any such person shall, upon complying with the provisions of this chapter, have the sole liberty of printing, reprinting, publishing, completing, copying, executing, finishing, and vending the same; and, in the case of dramatic composition, of publicly performing or representing it or causing it to be performed or represented by others; and authors or their assigns shall have exclusive right to dramatize and translate any of their works for which copyright shall have been obtained under the laws of the United States."

SEC. 2. That section 4954 of the Revised Statutes be, and the same is hereby, amended so as to read as follows:

"SEC. 4954. The author, inventor, or designer, if he be still living, or his widow or children, if he be dead, shall have the same exclusive right continued for the further term of fourteen years upon recording the title of the work or description of the article so secured a second time, and complying with all other regulations in regard to original copyrights, within six months before the expiration of the first term; and such persons shall, within two months from the

date of said renewal, cause a copy of the record thereof to be published in one or more newspapers printed in the United States for the space of four weeks."

SEC. 3. That section 4956 of the Revised Statutes of the United States be, and the same is hereby, amended so that it shall read as follows:

"SEC. 4956. No person shall be entitled to a copyright unless he shall, on or before the day of publication in this or any foreign country, deliver at the office of the Librarian of Congress, or deposit in the mail within the United States, addressed to the Librarian of Congress, at Washington, D. C., a printed copy of the title of the book, map, chart, dramatic or musical composition, engraving, cut, print, photograph, or chromo, or a description of the painting, drawing, statue, statuette, or a model or design for a work of the fine arts for which he desires a copyright, nor unless he shall also, not later than the day of the publication thereof in this or any foreign country, deliver at the office of the Librarian of Congress, at Washington, D. C., or deposit in the mail within the United States, addressed to the Librarian of Congress, at Washington, D. C., two copies of such copyright book, map, chart, dramatic or musical composition, engraving, chromo, cut, print, or photograph, or in case of a painting, drawing, statue, statuette, model, or design for a work of the fine arts, a photograph of the same: *Provided*, That in the case of a book, photograph, chromo, or lithograph, the two copies of the same required to be delivered or deposited as above shall be printed from type set within the limits of the United States, or from plates made therefrom, or from negatives or drawings on stone made within the limits of the United States, or from transfers therefrom. During the existence of such copyright the importation into the United States of any book, chromo, lithograph, or photograph so copyrighted, or any edition or editions thereof, or any plates of the same not made from type set, negatives or drawings on stone made within the limits of the United States, shall be, and it is hereby, prohibited. Except in the cases specified in paragraphs 512 to 516, inclusive, in section 2, of the act entitled 'An Act to reduce the revenue and equalize the duties on imports, and for other purposes,' approved Oct. 1, 1890; and except in the case of persons purchasing for use and not for sale, who import subject to the duty thereon not more than two copies of such book at any one time; and except in the case of newspapers and magazines, not containing in whole or in part matter copyrighted under the provisions of this act, unauthorized by the author, which are hereby exempted from prohibition of importation: *Provided, nevertheless*, That in the case of books in foreign languages, of which only translations in English are copyrighted, the prohibition of importation shall apply only to the translation of the same, and the importation of the books in the original language shall be permitted."

SEC. 4. That section 4958 of the Revised Statutes be, and the same is hereby, amended so that it will read as follows:

"SEC. 4958. The Librarian of Congress shall receive from the persons to whom the services designated are rendered the following fees:

"First. For recording the title or description of any copyright book or other article, 50 cents.

"Second. For every copy under seal of such record actually given to the person claiming the copyright, or his assigns, 50 cents.

"Third. For recording and certifying any instrument of writing for the assignment of a copyright, \$1.

"Fourth. For every copy of an assignment, \$1.

"All fees so received shall be paid into the Treasury of the United States: *Provided*, That the charge for recording the title or description of any article entered for copyright, the production of a person not a citizen or resident of the United States, shall be \$1, to be paid as above into the Treasury of the United States, to defray the expenses of lists of copyrighted articles as hereinafter provided for.

"And it is hereby made the duty of the Librarian of Congress to furnish to the Secretary of the Treasury copies of the entries of titles of all books and other articles wherein the copyright has been completed by the deposit of two copies of such book printed from type set within the limits of the United States, in accordance with the provisions of this act, and by the deposit of two copies of such other article made or produced in the United States; and the Secretary of the Treasury is hereby directed to prepare and print, at intervals of not more than a week, catalogues of such title entries for distribution to the collectors of customs of the United States and to the postmasters of all post-offices receiving foreign mails, and such weekly lists, as they are issued, shall be furnished to all parties desiring them, at a sum not exceeding \$5 per annum; and the Secretary and the Postmaster-General are hereby empowered and required to make and enforce such rules and regulations as shall prevent the importation into the United States, except upon the conditions above specified, of all articles prohibited by this act."

SEC. 5. That section 4959 of the Revised Statutes be, and the same is hereby, amended so as to read as follows:

"SEC. 4959. The proprietor of every copyright book or other article shall deliver at the office of the Librarian of Congress, or deposit in the mail, addressed to the Librarian of Congress, at Washington, District of Columbia, a copy of every subsequent edition wherein any substantial changes shall be made: *Provided, however*, That the alterations, revisions, and additions made to books by foreign authors heretofore published, of which new additions shall appear subsequently to the taking effect of this act, shall be held and deemed capable of being copyrighted as above provided for in this act, unless they form a part of the series in course of publication at the time this act shall take effect."

SEC. 6. That section 4963 of the Revised Statutes be, and the same is hereby, amended so as to read as follows:

"SEC. 4963. Every person who shall insert or impress such notice, or words of the same purport, in or upon any book, map, chart, dramatic or musical composition, print, cut, engraving, or photograph, or other article, for which he has not obtained a copyright, shall be liable to a penalty of \$100, recoverable one half for the person who shall sue for such penalty and one half to the use of the United States."

SEC. 7. That section 4964 of the Revised Statutes be, and the same is hereby, amended so as to read as follows:

"SEC. 4964. Every person who, after the recording of the title of any book and the depositing of two copies of such book, as provided by this act, shall, contrary to the provisions of this act, within the term limited, and without the consent of the proprietor of the copyright first obtained in writing, signed in presence of two or more witnesses, print, publish, dramatize, translate, or import, or, knowing the same to be so printed, published, dramatized, translated, or imported, shall sell or expose to sale any copy of such book, shall forfeit every copy thereof to such proprietor, and shall also forfeit and pay such damages as may be recovered in a civil action by such proprietor in any court of competent jurisdiction."

SEC. 8. That section 4965 of the Revised Statutes be, and the same is hereby, so amended as to read as follows:

"SEC. 4965. If any person, after the recording of the title of any map, chart, dramatic or musical composition, print, cut, engraving, or photograph, or chromo, or of the description of any painting, drawing, statue, statuette, or model or design intended to be perfected and executed as a work of the fine arts, as provided by this act, shall, contrary to the provisions of this act, within the term limited, and without the consent of the proprietor of the copyright first obtained in writing, signed in presence of two or more witnesses, engrave, etch, work, copy, print, publish,

dramatize, translate, or import, either in whole or in part, or by varying the main design with intent to evade the law, or, knowing the same to be so printed, published, dramatized, translated, or imported, shall sell or expose to sale any copy of such map or other article as aforesaid, he shall forfeit to the proprietor all the plates on which the same shall be copied and every sheet thereof, either copied or printed, and shall further forfeit \$1 for every sheet of the same found in his possession, either printing, printed, copied, published, imported, or exposed for sale, and in case of a painting, statue, or statuery, he shall forfeit \$10 for every copy of the same in his possession, or by him sold or exposed for sale; one half thereof to the proprietor and the other half to the use of the United States."

Sec. 9. That section 4967 of the Revised Statutes be, and the same is hereby, amended so as to read as follows:

"Sec. 4967. Every person who shall print or publish any manuscript whatever without the consent of the author or proprietor first obtained shall be liable to the author or proprietor for all damages occasioned by such injury."

Sec. 10. That section 4971 of the Revised Statutes be, and the same is hereby, repealed.

Sec. 11. That for the purpose of this act each volume of a book in two or more volumes, when such volumes are published separately and the first one shall not have been issued before this act shall take effect, and each number of a periodical shall be considered an independent publication, subject to the form of copyrighting as above.

Sec. 12. That this act shall go into effect on the 1st day of July, A. D. 1891.

Sec. 13. That this act shall only apply to a citizen of a foreign state or nation when such foreign state or nation permits to citizens of the United States of America the benefit of copyright on substantially the same basis as its own citizens; or when such foreign state or nation permits to citizens of the United States of America copyright privileges substantially similar to those provided for in this act; or when such foreign state or nation is a party to an international agreement which provides for reciprocity in the grant of copyright, by the terms of which agreement the United States of America may at its pleasure become a party to such agreement. The existence of either of the conditions aforesaid shall be determined by the President of the United States, by proclamation made from time to time, as the purposes of this act may require.

There were bitter protests against the measure in this form in both the Senate and the House of Representatives. In the latter body, March 2, Mr. Springer, of Illinois, said:

"Mr. Speaker, in the original bill there was a prohibition of certain books coming into this country under any circumstances. The Senate amended that by what is known as the Sherman amendment, so as to subject such books to the duty imposed by the existing tariff law. Now, the conference committee have modified that amendment by specifying what the exceptions are that are permitted to come in, and I desire to have read from the clerk's desk paragraphs 512 to 516 inclusive of the McKinley bill, which are the paragraphs referred to in this report, and which have not been considered by the House and are new matter entirely."

The clerk read as follows:

512. Books, engravings, photographs, bound or unbound, etchings, maps, and charts, which shall have been printed and bound or manufactured more than twenty years at the date of importation.

513. Books and pamphlets printed exclusively in languages other than English; also books and music in raised print, used exclusively by the blind.

514. Books, engravings, photographs, etchings, bound or unbound, maps and charts imported by authority or for the use of the United States, or for the use of the Library of Congress.

515. Books, maps, lithographic prints and charts specially imported, not more than two copies in any one invoice in good faith, for the use of any society incorporated for educational, philosophical, literary, or religious purposes, or for the encouragement of the fine arts, or for the use or by order of any college, academy, school, or seminary of learning in the United States, subject to such regulations as the Secretary of the Treasury shall prescribe.

516. Books, or libraries, or parts of libraries and other household effects of persons or families from foreign countries, if actually used by them not less than one year, and not intended for any other person or persons, nor for sale.

"The provisions of law as just read by the clerk show the books that come in free under the present law and which will continue to come in free if this bill should pass. Among the books thus admitted free are books in other languages than English. They are permitted to come in free, notwithstanding the copyright law. Books published in all languages except that which we habitually speak and read can come into the country without payment of duty as heretofore.

"The writings of Confucius in Chinese, or the Koran, or books in Sanskrit or any other language not ordinarily spoken in this country, are admitted without the payment of duty, but books in the language which we ordinarily speak or read are excluded by this bill. I simply wanted to call attention to this matter to show that Congress is now making a discrimination against the mother-tongue."

Mr. Kerr, of Iowa, said:

"As the gentleman from Illinois has just said, this bill in its present form is an absolute prohibition of the importation into this country of foreign books. Under previous laws, I believe, they were admitted by paying a duty of 30 per cent.; and the American publishers had the advantage of 25 or 30 per cent. in the publishing of books in this country. Under the law now proposed to be enacted, we shall be left entirely at the mercy of American publishers.

"The present bill pretends to be in the interest of the American author; but it affords him no protection whatever. Both the American author and the American reader are left entirely at the mercy of the great publishing houses of the country. Hereafter, if this bill should become a law, no American can buy a book that he can read (unless he first learns a foreign language) without paying just such price as the American publisher, operating without competition from any other source, may see fit to place upon it. This is in effect a Chinese wall against intelligence."

Mr. Breekenridge, of Arkansas, said:

"This evidently is not a copyright proposition disentangled from other questions. If it were that, or if it were within any reasonable limit an approximation to that, I should be among its warmest supporters; for I believe in the copyright doctrine (if it may be so defined) quite as strongly as any gentleman here. But I am repelled more than some others are by those matters which are associated with the copyright privileges or guarantees provided for in this bill.

"When we have a protective tariff on books, which is an inducement and a compulsion to that extent to have the plant of the publication put up in this country, it is enough, without our singling out books so essential for human advancement and making the protective feature, upon those articles absolutely prohibitory, which we do in the terms of this bill. It is not wise legislation, it is not just to the people of this country, that we should protect that feature of our commerce by absolute prohibition.

"Of course we provide for books to be obtained by some means; but, so far as imports are concerned, the publishers in this country can put up the price upon the works of a foreign author to any extent that they may please, if they can accomplish a combination; and of course the price which they may demand must come out of the buyer of the book before he can get access to it. In scientific matters and in many lines of study which enter into our industries, this is a question of exceeding importance.

"The gentleman from Illinois alludes to our discrimination against the 'mother-tongue.' We have a very large foreign element in this country, and we know that it is necessary that it should steadily assimilate with the mass of our people. When we make it easy for our foreign-born citizens to get books in their native language, we discourage that assimilation which we recognize as necessary for our social and political welfare.

"I do not believe in seeking to nationalize a community by banishing a particular tongue from the schools, by forbidding parents from educating their children in any language that they please. I do not believe in those arbitrary methods which obtain in the more despotic governments of Europe. But I believe it is equally wrong to legislate against that nationalization and assimilation of sentiment and of speech as we are doing in this bill.

"There is another feature of this matter to be considered. When certain general conditions, not here accurately defined, are fulfilled, then the President can put this law into operation by proclamation; and when those conditions, being very general in their character, are not, in his judgment complied with, he can revoke the operation of the law. It is a new and not a good feature of our policy when we take a step like this, which is virtually legislation by proclamation.

"We are reposing practically legislative power in the hands of the Chief Executive of this country. He is to judge of situations. We are not accurately defining them. He is not simply to proclaim a law we pass, but to judge of situations and proclaim the recall, and is empowered to promulgate as well as recall. It is an unwise policy, a policy that I think, if there were nothing else in the bill that I objected to, would induce me to vote against it, coupled as it is with other impolitic provisions."

The conference report was adopted by the following vote:

YEAS—Adams, Allen of Michigan, Atkinson of West Virginia, Banks, Bartine, Belden, Bliss, Boatner, Boutelle, Bowden, Brosius, Browne of Virginia, Brunner, Burrows, Burton, Butterworth, Bynum, Caldwell, Carter, Caruth, Caswell, Cheadle, Clark of

Wyoming, Cogswell, Coleman, Comstock, Covert, Craig, Culbertson of Pennsylvania, Cummings, Daltzell, De Lano, Dingley, Dunnell, Dunphy, Evans, Farquhar, Featherston, Fitch, Flower, Funston, Geary, Geissenhainer, Gibson, Greenhalge, Grout, Hall, Hansbrough, Harner, Hermann, Kerr of Pennsylvania, Ketcham, Kinsey, Knapp, La Follette, Laidlaw, Lansing, Lawler, Lee, Lehlbach, Lodge, Maish, McComas, McCormick, McDuffie, McKenna, McKinley, Miles, Miller, Moffitt, Moore of New Hampshire, Morey, Morrow, Mudd, Niedringhaus, O'Donnell, O'Neil of Massachusetts, O'Neill of Pennsylvania, Parrett, Payne, Penington, Pindar, Price, Quinn, Raines, Randall, Reilly, Reyburn, Rife, Rowell, Russell, Sawyer, Seull, Sherman, Shively, Simonds, Smith of West Virginia, Smyser, Snider, Spinola, Spooner, Stewart of Vermont, Stockbridge, Stone of Pennsylvania, Stump, Sweet, Tarsney, Taylor of Tennessee, Thompson, Tillman, Townsend of Colorado, Tucker, Turner of New York, Vandever, Vaux, Waddill, Wade, Walker, Wallace of New York, Wickham, Willcox, Williams of Ohio, Wilson of Washington, Wilson of West Virginia, Wright, Yardley, Yoder—127.

NAYS—Abbott, Alderson, Atkinson of Pennsylvania, Bankhead, Barnes, Barwig, Bergen, Blanchard, Breckenridge of Arkansas, Brickner, Brookshire, J. B. Brown, Buchanan of Virginia, Buckalew, Bunn, Catchings, Clements, Cooper of Indiana, Cowles, Crain, Crisp, Dibble, Dickerson, Dockery, Dolliver, Edmunds, Ellis, Forney, Fowler, Gest, Grimes, Grosvenor, Hatch, Haugen, Haynes, Heard, Herbert, Holman, Hooker, Kennedy, Kerr of Iowa, Lacey, Lane, Lester of Virginia, Lewis, Lind, Mansur, Martin of Indiana, Martin of Texas, McClammy, McCreary, McMillin, McRae, Montgomery, O'Ferrall, O'Neill of Indiana, Owens of Ohio, Paynter, Peel, Perkins, Ray, Rogers, Seney, Skinner, Smith of Illinois, Springer, Stephenson, Stockdale, Stone of Missouri, Sweney, J. D. Taylor, Thomas, Washington, Whitelaw, Williams of Illinois, Wilson of Kentucky, Wilson of Missouri—77.

NOT VOTING—Allen of Mississippi, Anderson of Kansas, Anderson of Mississippi, Andrew, Arnold, Baker, Bayne, Beckwith, Belknap, Biggs, Bingham, Bland, Blount, Boothman, Breckinridge of Kentucky, Brewer, Brower, T. M. Browne, Buchanan of New Jersey, Bullock, Campbell, Candler of Georgia, Candler of Massachusetts, Cannon, Carlton, Cheatham, Chipman, Clancy, Clarke of Alabama, Clark of Wisconsin, Clunie, Cobb, Connell, Cooper of Ohio, Cothran, Culbertson of Texas, Cutcheon, Dargan, Darlington, Davidson, Dorsey, Enloe, Ewart, Finley, Fithian, Flicke, Flood, Forman, Frank, Gear, Gifford, Goodnight, Hare, W. I. Hayes, E. R. Hays, Hemphill, Henderson of Illinois, Henderson of Iowa, Henderson of North Carolina, Hill, Hitt, Hopkins, Houk, Kelley, Kilgore, Langston, Lanham, Laws, Lester of Georgia, Magner, Mason, McAdoo, McClellan, McCord, Miliken, Mills, Moore of Texas, Morgan, Morrill, Morse, Mutchler, Norton, Nute, Oates, Osborne, Outhwaite, Owen of Indiana, Payson, Perry, Peters, Pickler, Pierce, Post, Pugsley, Quackenbush, Reed of Iowa, Richardson, Robertson, Rockwell, Rowland, Rusk, Sanford, Sayers, Scranton, Stahlnecker, Stewart of Georgia, Stewart of Texas, Silvers, Stone of Kentucky, Struble, Taylor of Illinois, E. B. Taylor, Townsend of Pennsylvania, Tracey, Turner of Georgia, Turner of Kansas, Van Schaick, Wallace of Massachusetts, Wheeler of Alabama, Wheeler of Michigan, Whiting, Whitthorne, Wike, Wiley, Wilkinson—125.

In the Senate, March 3, Mr. Sherman, of Ohio, said:

"Now, the question is whether the Senate of the United States are willing to enter upon this new field of legislation, to abandon a practice, whether good or bad, which has existed for over a hundred years, by which anybody can print any book published in a foreign country

at will and pleasure and sell it to the people of the United States. This bill departs from that old practice and adopts a new one, to give to the author his right of authorship and the exclusive right to sell his books in the United States of America. But it goes beyond that. It gives to the publisher employed by the author the exclusive right to publish the book without competition with foreign countries. It is that theory and that principle which has been twice negated by the decided vote of the Senate, and that now has been surrendered.

"The effect of the proposition as it now stands is to make the copyright granted an exclusive monopoly to publish a book in the United States without any competition from foreign countries except that contained in two provisions. First, I will refer to the provision offered by the Senator from Kansas. It takes the heart and life out of that proposition. The proposition of the Senator from Kansas was to allow magazines and newspapers of current literature to come into the country free. Most of it comes in free of all duty whatever under the existing law. But now if the London 'Times' contains a chapter of a book that is copyrighted in this country it must be excluded. Take the great magazines with which we are familiar, 'Blackwood's' and the various other magazines published in England, some of which, it is said, have a larger circulation in the United States than in England. If such a magazine contains portions of chapters or extracts from an author, in certain cases it would be in violation of this rule, and consequently it could not be imported here.

"The liability of any book or magazine or paper being confiscated by the revenue officers because it contains matters that have been copyrighted in this country would be a new departure from anything that has ever happened before. It would be an embarrassment without limit. It practically nullifies the clause inserted upon motion of the Senator from Kansas. All those who are familiar with the ordinary quarterlies and reviews and monthlies of England know that the great body of those magazines rest upon reviews and criticism involving extracts from works that are copyrighted in this country or that are supposed to be copyrighted in this country.

"Now as to the other proposition, the object of the amendment that was finally formulated by the Senator from Kentucky, the idea of which I first suggested, is that there ought to be competition between the publishers in England and the publishers in our own country, a competition in accordance with our general laws, which by duties on imported books gives to the home publisher a great advantage.

"These books can not be introduced here, except that two copies may be ordered by a single person. So if I desire to send to England for a book that has been copyrighted in this country, I have the privilege to do so, but at what cost and expense? If I send an order for two books to a London bookseller and have them directed to me here, I have the right, according to this proposition, upon paying the duty, to import them. But what is that right worth? In the first place, I have to buy the books at the retail price. A man can not get books into this country except by a

triplicate invoice. Anybody who undertakes to purchase a suit of clothes or anything of that kind from abroad has to have a triplicate invoice signed by the consul in London, the cost of which I do not know, but it is considerable for every invoice. It costs just as much to make out an invoice for two books as it would cost for a thousand books, and he can only make this invoice for two books and no more. He has to pay at least from \$1.50 to \$8 for the expense of invoicing. Then, further, is the expense of transportation, and besides he has to pay the duty; so that in effect the cost would be added to so great an amount in this favor that is granted to the American people to import books from abroad that no one except a very rich man could afford to import any books whatever.

"In other words, it is a denial to the people of the United States of the right to import any books that have been copyrighted in this country except at an expense which would place this privilege far beyond the reach of ordinary people. So none but the rich, who are indifferent to the cost of importation, could indulge in this bounty given to the people of the United States.

"Now, the right to import books, the right to read books, the love of books, is more general in this country than anywhere else, as I said this afternoon; and yet this right which every American citizen has enjoyed since the declaration of American independence is so limited and cribbed by the operations of this proposed law that it can not be exercised practically; and it would be better entirely to strike out this provision and leave it to a broad inhibition to prohibit absolutely the importation of any books from abroad."

In condemnation of these criticisms, Mr. Evans, of New York, said:

"Mr. President, we can not discuss the fundamentals of copyright. What we are to discuss is how we will extend the privilege of copyright, which involves the monopoly of copyright of foreign authors for the benefit of the people of this country. Two arguments reach the subject: the benefit we are to have from foreign authorship made in our country valuable to the writer, and the reciprocal advantage to our authors in their authorship in the foreign country.

"We have been treated this afternoon to an hour's discussion on minor and trivial topics. The arrangement now laid before the Senate would dispose of all those objections. We were told that a rich man or a scholar loving books should be at liberty to have handsome books, costly books, with good type for his failing eyes. We were told it was absurd that returning travelers bringing their books for their use on shipboard should have to throw them overboard when they reach here. That has been disposed of.

"We were told that foreigners coming here should not be cut off from their relations to their foreign authorship and their foreign affections in literature. That has all been disposed of. All these things are now brought into the discussion by the enemies of the copyright. But these objections amount to nothing.

"What is there left, then? It is seriously nothing but this, that whereas now all foreign literature may be appropriated to the consumption and the enlargement of knowledge there-

from without cost and without protection to the author, if we recognize the copyright, cheap literature and cheap access to knowledge will be burdened.

"Mr. President, there is nothing in that but the mere question whether you will give copyright protection to foreign authorship. Foreign authorship can not get it in the spirit separated from the body. The body in which literature appears is by type and print and publishing. That is what needs to be protected, not thoughts while not committed to the public, while diffused by conversation, or public knowledge that is in the mind until it is promulgated; but the author has no mode of protection at home or abroad except in the vehicle of publication by which readers are open in access to his thoughts and the revenue from that patronage shall arise.

"Therefore, when Senators tell us that for years they have been in favor of copyright, in favor of protecting foreign authorship, in favor of justice and duty, and then tell us that they are not for this measure here to-night, what worth is it that they have all those noble sentiments in favor of the protection of literature?"

The Senate concurred in the conference committee's report by the following vote:

YEAS—Aldrich, Allen, Chandler, Dawes, Dixon, Dolph, Edmunds, Farwell, Frye, Hawley, Hiseock, Hoar, Jones of Nevada, McMillan, Morrill, Pasco, Pierce, Platt, Sawyer, Shoup, Spooner, Stanford, Stewart, Warren, Washburn, Wilson, Wolcott—27.

NAYES—Bate, Berry, Call, Carlisle, Casey, Coke, Culom, Daniel, Faulkner, Gorman, Gray, Ingalls, Kenner, Morgan, Pettigrew, Plumb, Ransom, Sherman, Walthall—19.

ABSENT—Allison, Barbour, Blackburn, Blair, Blodgett, Brown, Butler, Cameron, Carey, Cockrell, Colquitt, Davis, Eustis, Everts, George, Gibson, Hale, Hampton, Harris, Higgins, Jones of Arkansas, McConnell, McPherson, Manderson, Mitchell, Moody, Paddock, Payne, Power, Pugh, Quay, Reagan, Sanders, Squire, Stockbridge, Teller, Turpie, Vance, Vest, Voorhees—40.

Later in the day an attempt was made to recall the bill from the House and have it reconsidered, but the effort failed. The measure was approved by the President March 3, 1891.

Apportionment of Representatives.—Mr. Dunnell, of Minnesota, from the Committee on the Eleventh Census, reported, Dec. 16, 1890, the following bill for the apportionment of Representatives among the States on the basis of that enumeration:

Be it enacted, etc., That after the 3d of March, 1893, the House of Representatives shall be composed of 356 members, to be apportioned among the several States as follows: Alabama, 9; Arkansas, 6; California, 7; Colorado, 2; Connecticut, 4; Delaware, 1; Florida, 2; Georgia, 11; Idaho, 1; Illinois, 22; Indiana, 13; Iowa, 11; Kansas, 8; Kentucky, 11; Louisiana, 6; Maine, 4; Maryland, 6; Massachusetts, 13; Michigan, 12; Minnesota, 7; Mississippi, 7; Missouri, 15; Montana, 1; Nebraska, 6; Nevada, 1; New Hampshire, 2; New Jersey, 8; New York, 34; North Carolina, 9; North Dakota, 1; Ohio, 21; Oregon, 2; Pennsylvania, 30; Rhode Island, 2; South Carolina, 7; South Dakota, 2; Tennessee, 10; Texas, 13; Vermont, 2; Virginia, 10; Washington, 2; West Virginia, 4; Wisconsin, 10; Wyoming, 1.

Sec. 2. That whenever a new State is admitted to the Union the Representative or Representatives assigned to it shall be in addition to the number 356.

Sec. 3. That in each State entitled under this ap-

portionment the number to which such State may be entitled in the Fifty-third and each subsequent Congress shall be elected by districts composed of contiguous territory and containing as nearly as practicable an equal number of inhabitants. The said districts shall be equal to the number of the Representatives to which such State may be entitled in Congress no one district electing more than one Representative.

Sec. 4. That in case of an increase in the number of Representatives which may be given to any State under this apportionment, such additional Representative or Representatives shall be elected by the State at large, and the other Representatives by the districts now prescribed by law until the Legislature of such State in the manner herein prescribed shall redistrict such State, and if there be no increase in the number of Representatives from a State the Representatives thereof shall be elected from the districts now prescribed by law until such State be redistricted as herein prescribed by the Legislature of said State.

Sec. 5. That all acts and parts of acts inconsistent with this act are hereby repealed.

In presenting the measure Mr. Dunnell said:

"Mr. Speaker, it seems to me that I shall have discharged my duty as chairman of the Committee on the Eleventh Census if in a few words, and a very few words, I shall explain the provisions of the bill. It appears here responsive to the requirements of the second section of Article XIV of the Constitution of the United States, and is based upon the eleventh census, that was officially announced on the 25th of November last.

"The first section of the bill provides for the number of Representatives that shall be allowed from each State in the Fifty-third and subsequent Congresses. It provides for a membership of 356, which is an increase of 24 members over the present number. Later I will call attention to the method that has been used in ascertaining the number to which each State is entitled under the census. The first section simply alludes to the membership as it shall be in the Fifty-third and subsequent Congresses. Before I proceed to define the method by which the number was ascertained I shall say in a general way that sections 2, 3, 4, and 5 are almost identical with the corresponding sections as they appear in the apportionments based upon the ninth and also upon the tenth census. There is no new provision incorporated in those sections, and they are, as I have already said, substantially the same. There was no contest in the committee over these sections except such as was merely verbal.

"Twenty-five of the forty-four States will receive under this bill the same number of Representatives which they now have. There are thirteen States, as will be seen in the report of the committee, which will be entitled under the bill to an additional member—Alabama, Arkansas, California, Colorado, Georgia, Kansas, Massachusetts, Michigan, Missouri, New Jersey, Oregon, Washington, Wisconsin. There are two additional members allowed under the bill to each of the following States: Illinois, Minnesota, Pennsylvania and Texas. Three additional members are given to the State of Nebraska.

"I might, if I saw fit, make some allusion to the census of this year, upon which the new apportionment of members has been made. I could do so with pride as an American citizen, in not-

ing the great growth of the population of the United States compared with the population a hundred years ago. On page 4 of the report will be seen the figures of the population of 1790, 3,929,214. The population of the United States this year is 62,622,350. But, Mr. Speaker, I do not consider it necessary to dwell upon this increase in our population. It will, however, be a matter to be considered when we discuss the question whether our present representation shall remain, or whether it shall be increased according to the provisions of this bill.

"There is a diversity of opinion among the members of the House, and there was some among the members of the committee, upon that point. There were those upon the committee favoring the present number of members. There was also upon the committee one gentleman, the member from South Carolina, who advocated a large increase in the membership of the House. The committee finally decided to accept and adopt the number 356. I shall be asked why this number rather than any other was selected. I reply that it was selected because it was found to be the number first reached between 332 and 375 that would secure to each State its present representation.

"The committee discovered in the House a decided unwillingness, almost universally entertained and very largely expressed, to consent to any reduction in the present number of members assigned to any State. This bill, therefore, provides that no State shall suffer a decrease in its present representation. This was one object sought in the apportionment which has been made. The number 356 is also fortunate, as was found, in this, that, using it primarily as a divisor in the aggregate population of the United States, after subtracting the population of the District of Columbia and the four Territories, a ratio was obtained which, divided into the population of each State, gave the most favorable results. That ratio was 173,901. With this as a ratio, the present bill has been constructed. The outcome has already been stated to the House.

"As I have already said, there has been an increase to thirteen States of one member each. Four States get two additional members each, and one State gets three additional members. Using that number, 173,901, as the divisor, the ratio, it was discovered in its use that there would be left no fraction, and no State unprovided for having a fraction more than one half. That was not found to be true with any other ratio than 173,901. If gentlemen will turn to page 13 of the report they will see that no major fractions remain in making up the number of members assigned to the House. On an even division by this ratio the number of members found was 339. This statement will be found substantially presented on the third page of the report accompanying this bill.

"In order to obtain the number 356, after having obtained the number 339, whether pursuing the old or the new method, fractions were sought which would entitle a given State to an additional member, as 17 additional members were needed in order to make the total number 356. The following States were found to have major fractions: Alabama, California, Georgia, Indiana, Iowa, Kentucky, Maine, Maryland, Massa-

chusetts, Oregon, Rhode Island, South Carolina, South Dakota, Texas, Vermont, Virginia, and Wisconsin. Using the major fractions as they were found to exist, the additional 17 members were secured and there was no major fraction left, so that, approximately, complete justice was done to all the States.

"As I said a moment ago there were those upon the committee who desired to retain the present number, but it was found that that could not be used without contravening what seemed to be the universal sentiment of the House, because very many States would lose one from their present representation. There would be ten States that would lose one member each. Letting this fact guide us, there was found to be no other number that we could reasonably make use of than 356, and no other ratio than 173,901.

"Mr. Speaker, this bill, in my judgment, is an eminently fair one, and I think it must commend itself to all the members of this House as fair and just. Recognizing the wish of the House that there should be no diminution of membership, the committee were forced, as I have said, to the acceptance of the number 356. Gentlemen will, of course, see that some number ultimately must be used, and some ratio ultimately must control the committee. Three hundred and fifty-nine is a number that would let in three additional Representatives. A good argument can be made in favor of that number. It would give the State of Arkansas, the State of Minnesota, and the State of New York one additional member each. I made the motion in the committee that 359 be adopted, but it did not meet the concurrence of the committee.

"The difficulty in increasing to 359 will be seen by an examination of the tables presented in the report. It will be seen that by using the ratio which would then be necessary, namely, 172,448, and going through with all the States in that way, there would remain to some States fractions unprovided for as large as the fractions which now remain unprovided for to Arkansas, Minnesota, and New York. And, if we were to step forward 2, 3, 4, or any given number, we would have a different ratio, and therefore a different condition of the remaining unprovided for fractions.

"So that, Mr. Speaker, there is a necessity for stopping somewhere. No State is really legislated against, because no State having a major fraction is left out. If I recollect, Mr. Speaker—and I was a member of the House when the apportionment bill based upon the ninth census and also the bill based upon the tenth census passed—a major fraction absolutely controlled in both of those cases. We are making no departure, therefore, when we insist that the number 356 has been properly taken and may be properly adhered to. If we depart from it we shall find ourselves liable to do injustice to another class of States, while no State is really unjustly treated by the proposed apportionment."

Mr. Flower, of New York, attacked the apportionment on the ground that the enumeration of the population of New York city was incorrect:

"Under this bill the State of New York will have 34 Representatives in Congress, the same number that it now has. It is my purpose to

present to this House some reasons why that number should be increased upon the basis of 173,902.

"The Federal census showed a population in the city of New York of 1,513,000, and the subsequent police census showed a population of 1,710,715, a difference of nearly 200,000.

"Section 9 of the census act is as follows:

It shall be the duty of each enumerator, after being qualified in the manner aforesaid, to visit personally each dwelling house in his subdivision, and each family therein, and each individual living out of a family in any place of abode, and by inquiry made of the head of such family, or of the member thereof deemed most credible and worthy of trust, or of such individual living out of a family, to obtain each and every item of information and all the particulars required by this act, as of date June 1, 1890. And in case no person shall be found at the usual place of abode of such family or individual living out of a family competent to answer the inquiries made in compliance with the requirements of this act, then it shall be lawful for the enumerator to obtain the required information as nearly as may be practicable from the family or families, or person or persons, living nearest to such place of abode.

"This section of the law clearly and specifically sets out the duty of the enumerators and leaves no reasonable excuse, under ordinary circumstances, for a failure to make a substantially correct enumeration. If the occupants of the house are not at home and can not be reached for the purpose of personal inquiry of them, it is the plain duty of the officers to resort to the next sources of information concerning those persons. The mere fact so frequently found set out in the returns of the enumerators, that certain houses were closed, is no justification for their failure to ascertain the number of persons occupying those houses.

"Inquiry of those residing or doing business in the neighborhood would in nearly all cases provide them with information which, if not sufficiently accurate to enable them to make proper returns, would at least afford grounds for more particular inquiry at those places from which the usual inhabitants were then absent, and the local authorities, when it was made their duty to ascertain the number of persons within the territory to which they were assigned to make an enumeration, resorted to these sources of information with perfectly satisfactory results. The Federal enumerators had their schedules so loaded down with impertinent questions concerning the mental, physical, and moral conditions of the people that they did not seem to think it worth while to be especially particular in acquiring information as to the exact numbers that were within their particular bailiwicks.

"If the Federal enumerators had properly performed their duties, the subsequent enumeration made by the police officers of New York city would have presented to the country a most remarkable spectacle of the inaccuracy of those most familiar with the people and the localities of their own city. This variance of numbers is within itself, in the absence of any well-grounded charge of fraud or purposed false enumeration by the local authorities, a sufficient reason to arouse a proper suspicion that the Federal enumerators, selected not because of their special fitness for the positions they were to fill and the

duties they were to perform, but mainly upon the recommendation of local Republican political organizations, were, to say the least, incompetent.

"There is not the slightest reason in the world for believing that the police officers of New York city were either incompetent or intentionally inaccurate, and in this state of the case the very least that might be reasonably expected of those upon whom devolves the duty of ascertaining the whole number of inhabitants of a State is that they would take the necessary steps to verify their own enumeration, especially when the law clearly provides, as does the act of March 1, 1889, for the verification of returns.

"These local authorities, after making their enumeration, selected one political division of the State—the Second Ward—for the purpose of comparison with the Federal enumeration. The Federal enumeration had shown in that ward a population of 927. The police enumeration showed a population of 1,340, a difference of 413. It was found upon comparison that the Federal enumerators had included some that were not included in the local enumeration. This showing was made the main basis of the application to the Federal authorities for the retaking of the census for that city.

"The selection of the Second Ward was made because of the small territory covered by it and the comparatively small population. It was a ward the population of which is composed largely of persons residing in business houses, and while it is not pretended that the discrepancy throughout the whole city is proportionately as great as here, the selection was not made because of the larger proportion of the discrepancy in this ward, but wholly for the reason that I have stated.

"Affidavits of several hundred of the inhabitants of the ward were taken by the local authorities, all showing that these persons were residing at the same places when the local authorities enumerated them at which they resided on the first day of June, and throughout the continuance of the Federal enumeration, and that they had been omitted by the Federal enumerators. Some attempt was made by the Superintendent of the Census to discredit some of these affidavits in the hearing before the Census Committee; but of all the hundreds of affidavits there presented there was nothing approaching successful contradiction in more than two or three cases. And to that hearing, which is soon to be printed, I invite the attention of this House. There is set forth clearly the grounds upon which the city of New York claims that she is entitled to a re-enumeration, and the evidence of the inaccuracy of the work of the Federal enumerators. The argument and the evidence together are somewhat voluminous, and I shall not occupy the attention of the House in going thoroughly into the matter.

"About the only pretense set up as an excuse for refusing a re-enumeration that is at all worthy of attention is that an enumeration made now would show a very different number of inhabitants from that shown by an enumeration taken June 1. I say worthy of attention; but I think that very slight attention will satisfy anybody that this is a mere pretense.

"The people can be relied upon to disclose to the enumerators on the first of June everything concerning their private affairs, their mental and bodily ailments, that the census schedules called for, but they can not be relied upon to give truthful answers at this time as to whether or not they were residents of certain localities at the time that they should have been enumerated under the law. This is the sum and substance of this whole matter. If the people of New York city can be trusted to give truthful answers to questions directed at their sanity and chronic diseases, they can be trusted now to give truthful answers to the only other question that it is necessary for them to reply to in order to verify the enumeration taken in June.

"Sir, this demand for a re-enumeration is no unusual or unreasonable proposition. It is a mere repetition of a demand that is made by various municipalities and States once every ten years. It is a very rare thing, if indeed it ever occurs, that a census is taken in this country which passes wholly unquestioned in every locality, and I believe that never yet has there been a stronger showing of inaccuracy of any census heretofore taken as there has been as to the eleventh census in the city of New York.

"Certainly there has never been as strong a demand so persistently and unanimously urged by any locality as that which has come up from my city; and yet time and again recounts have been allowed. While General Grant was President of the United States a recount was allowed in New York and Philadelphia, both on a much slighter showing than we have now presented. Kansas City, Mo., and various other cities and localities throughout the country have had a re-enumeration to verify the first returns of this census. The whole State of South Carolina was re-enumerated under the tenth census; and the instances of these re-enumerations have been too frequent and too many to justify any attempt upon my part to state them all.

"It is not a crime to ask to be counted, and, until the undignified and vituperative responses of some of the Federal officials to the requests of the New York authorities were promulgated, the people of that city and State were not aware that there was any special obloquy attached to a request for a full and fair enumeration.

"If New York city is allowed to have her people counted she will be entitled certainly to one more Representative than this bill provides for, and probably to two; and it is the plain duty of this Congress to afford her every reasonable opportunity to show the full number of her inhabitants, and especially so in view of the fact that there have recently been admitted to the Union, the States to which I have referred, and which will have, under any circumstances, a power and influence in the Government wholly disproportioned to their population.

"The city of New York is ready at any time to afford every facility to the Federal authorities to make any investigation and any enumeration that they may be disposed to make. The police officers of that city are at the command of the census authorities to join with them in making a canvass of the population. Anything less than an enumeration of all the inhabitants of that city will be a plain denial of justice to

our people. Political screeds, promulgated from the Interior Department, and directed at the Chief Executive of our State, will not answer the just demand of our people to have themselves counted in the eleventh census."

Mr. Holman, of Indiana, criticised the measure for increasing the membership of the House:

"The present number is 832. The number fixed by the last apportionment was 325 and 7 members added since by the admission of new States, and this bill increases the number from 332 to 356. The evidence around us on all hands is that even the present number of members is too large for safe, prudent, and intelligent legislation. Certainly gentlemen will admit that to secure intelligent legislation each member must have an opportunity to understand fully what is transpiring. That can not be done even now. Indeed, Mr. Speaker, it is obvious that even now, with 332 members in this House, it is impossible for all gentlemen to keep the run of current business. Many are too remote from the clerk's desk to even hear in the midst of the confusion incident to a large assembly the reading of bills on which they are called.

"I have not indulged the hope that there would be any reduction in the number of Representatives from the present number. It would require a very strong sentiment of reform in Congress to effect that, and a large amount of self-denial on the part of the statesmen of the several States of the Union. Indeed, as has been already stated by the gentlemen from Minnesota, ever since the organization of our Government, when the number of members of this House was 65—never since that time, except on one occasion, has the House of Representatives been willing to reduce the numbers, and in every other apportionment the number has been increased. That exception was in 1843. That was a very interesting period of our history. The apportionment of 1843 was an incident to the political contest of 1840.

"The spirit of reform had taken at that period a stronger hold on the American people than has occurred at any other period in our history. The political ground swell of 1840 had in the main grown out of the surplus in our Treasury in previous years, the result of excessive tariff taxation and the excessive inflation of the currency with worthless paper money, and the recoil incident to them which prostrated every industry and brought our people face to face with the demand for searching reforms in the Government. That canvass of 1840 produced a wonderful effect upon the public mind.

"It was a political cyclone in which the old party organizations were badly broken to pieces. The party triumph in that campaign turned to ashes, but its purifying effect was felt for years afterward in the economic methods as well as in the general policy of our country. So that, looking back to the history of that period, it is not remarkable that the statesmen of that era were able to look at the question of the number of members of this House with self-denying impartiality, with no object in view except the public good. The good of our country is undoubtedly the desire of all of us now, but local considerations and patriotic pride in our several States control in a very large degree our political ac-

tion. We shrink from an apportionment that would reduce the power of our respective States in this hall and in the electoral college, yet some time or other this will be inevitable.

"I am in favor of an ample number of members to represent in Congress every possible interest of the people of the several States of the Union. I wish to have every State fully represented so that no interest shall be left without a voice on this floor. But in my humble judgment that end is already reached and more; the 332 members now authorized to be elected to Congress do represent every conceivable interest of the American people. Even with the present number it is said that the House is no longer a deliberative body. If it is not, we have no wise or intelligent legislation.

"What, sir, are the evils of an excessive number of Representatives, a House composed of members beyond a reasonable number? What are the evils attending a legislative body too large for intelligent deliberation?

"In the first place, it diminishes the personal responsibility of members. In fact, it dwarfs the individual member, no matter how great and intelligent the constituency he represents. As a result of diminished responsibility, with increased numbers, the number of efficient members and the legislative power and intelligence of the House are absolutely diminished. I take up the record of yesterday's proceedings, the last 'Congressional Record' issued, and I refer to the vote upon two important bills, the only measures voted upon yesterday by yeas and nays. In one case the affirmative vote was 91, the negative vote 105, those not voting 135, and this bill involved a probable expenditure of \$15,000,000; so that even with a House of 332 members the absentees actually exceeded the number voting for or against the proposition.

"In the other case, on a bill involving very considerable public interests, the affirmative vote was 73, the negative vote 80, while the absentees numbered 169, the absentees actually exceeding in number both the affirmative and negative votes. This is a fair sample of the condition of our legislation with a membership of 332. What will it be when you add 24 to that number? What will it be in the next decade? Such absenteeism would be impossible with the number fairly responsible. I have heard the example of the British House of Commons repeatedly quoted as an argument in favor of enlarged representation on this floor. That example is constantly quoted, and we are told that our House of Representatives is framed on the British model. There are 670 members of the British House of Commons, and I deny that there is any analogy in fact between our House of Representatives and the British House of Commons.

"But what is the result of so large a House? A quorum is 40; so that in a legislative body composed of 670 members—a larger number than can by any human possibility deliberate in legislation—40 members constitute the legislative assembly and can enact laws. Is this much of an argument for following the British example in legislation? That is a result—and perhaps one of the inevitable results—of excessively large legislative bodies. The power in all such bodies is finally vested in a few great committees and

the Speaker of the House. Does not the present state of the rules in this House and the power of the Speaker and a few chairmen admonish gentlemen of the result and peril of excessive numbers? There is, however, another consideration which I want to mention very briefly, and which to my mind is of still greater importance than any other that can be urged.

"By the greatly increased number of members of Congress you not only diminish individual responsibility, create absenteeism, and render deliberation and prudent and intelligent legislation impossible, but the tendency of great Houses of Congress (Senate and House) is to dwarf the local legislatures of the several States. Such I think is the inevitable tendency at least in its effect on the public mind, when, in fact, in the nature of things, the State Legislatures dealing in all that concerns the local and domestic affairs of our people, in all their widespread and countless forms, do, except as to a few great and important matters of national concern, affect the welfare of our people more than the proceedings of Congress."

The following table was given in illustration of the apportionment:

Total population of the States, 61,908,906.		Ratio, 1: 173,901.			
STATES.	Population.	No. of representatives on even division.	Fraction resulting.	Final number of representatives.	
Alabama.....	1,513,017	8	121,809	9	
Arkansas.....	1,123,179	6	84,773	6	
California.....	1,208,130	6	164,724	7	
Colorado.....	412,193	2	64,896	2	
Connecticut.....	746,258	4	50,654	4	
Delaware.....	163,493	1	.....	1	
Florida.....	891,422	5	48,020	5	
Georgia.....	1,637,353	10	98,343	11	
Idaho.....	54,355	1	.....	1	
Illinois.....	3,826,351	22	520	22	
Indiana.....	2,192,404	12	105,592	13	
Iowa.....	1,911,896	10	172,886	11	
Kansas.....	1,427,096	8	85,888	8	
Kentucky.....	1,853,685	10	119,625	11	
Louisiana.....	1,118,587	6	75,181	6	
Maine.....	661,056	3	139,388	4	
Maryland.....	1,042,890	5	172,885	6	
Massachusetts.....	2,238,943	12	162,181	13	
Michigan.....	2,098,859	12	7,077	12	
Minnesota.....	1,801,826	7	84,519	7	
Mississippi.....	1,289,600	7	72,293	7	
Missouri.....	2,679,134	15	70,666	15	
Montana.....	132,159	1	.....	1	
Nebraska.....	1,058,910	6	15,504	6	
Nevada.....	45,761	1	.....	1	
New Hampshire.....	876,530	2	28,723	2	
New Jersey.....	1,444,933	8	58,725	8	
New York.....	5,997,858	34	85,219	34	
North Carolina.....	1,617,947	9	52,893	9	
North Dakota.....	132,719	1	8,618	1	
Ohio.....	3,672,816	21	20,395	21	
Oregon.....	813,767	1	139,866	2	
Pennsylvania.....	5,258,014	30	40,984	30	
Rhode Island.....	345,506	1	171,605	2	
South Carolina.....	1,151,149	6	107,745	7	
South Dakota.....	828,808	1	154,907	2	
Tennessee.....	1,767,518	10	25,505	10	
Texas.....	2,235,528	12	143,711	13	
Vermont.....	332,422	1	153,521	2	
Virginia.....	1,655,980	9	90,871	10	
Washington.....	349,890	2	1,588	2	
West Virginia.....	762,794	4	67,190	4	
Wisconsin.....	1,656,880	9	121,771	10	
Wyoming.....	60,705	1	.....	1	
Total.....	61,908,906	339	8,334,469	356	

The bill passed the House on Dec. 17, 1890, by a vote of 187 yeas to 82 nays—not voting, 63.

The measure passed the Senate on Jan. 29, 1891, after a moderate discussion, by a vote of 37 yeas to 24 nays—absent, 27. The President approved it on Feb. 10, 1891.

Immigration Bill.—This measure, "in amendment of the various acts relative to immigration and the importation of aliens under contract or agreement to perform labor," was introduced in the House by Mr. Owen, of Indiana, and referred to the Committee on Immigration and Naturalization. It was reported back, discussed, and amended, and passed the House, Feb. 25, 1891, as follows:

It is enacted, etc., That the following classes of aliens shall be excluded from admission into the United States, in accordance with the existing acts regulating immigration, other than those concerning Chinese laborers: All idiots, insane persons, paupers or persons likely to become a public charge, persons suffering from a loathsome or a dangerous contagious disease, persons who have been convicted of a felony or other infamous crime or misdemeanor involving moral turpitude, polygamists, and also any person whose ticket or passage is paid for with the money of another or who is assisted by others to come, unless it is affirmatively and satisfactorily shown on special inquiry that such person does not belong to one of the foregoing excluded classes, or to the class of contract laborers excluded by the act of Feb. 26, 1885. But this section shall not be held to exclude persons living in the United States from sending for a relative or friend who is not of the excluded classes, under such regulations as the Secretary of the Treasury may prescribe: *Provided*, That nothing in this act shall be construed to apply to or exclude persons convicted of a political offense, notwithstanding said political offense may be designated as a "felony, crime, infamous crime, or misdemeanor involving moral turpitude" by the laws of the land whence he came or by the court convicting.

SEC. 2. That no suit or proceeding for violations of said act of Feb. 26, 1885, prohibiting the importation and migration of foreigners under contract or agreement to perform labor, shall be settled, compromised, or discontinued without the consent of the court entered of record with reasons therefor.

SEC. 3. That it shall be deemed a violation of said act of Feb. 26, 1885, to assist or encourage the importation or migration of any alien by promise of employment through advertisements printed and published in any foreign country; and any alien coming to this country in consequence of such an advertisement shall be treated as coming under a contract as contemplated by such act; and the penalties by said act imposed shall be applicable in such a case: *Provided*, This section shall not apply to States, and immigration bureaus of States, advertising the inducements they offer for immigration to such States.

SEC. 4. That no steamship or transportation company or owners of vessels shall directly, or through agents, either by writing, printing, or oral representations, solicit, invite, or encourage the immigration of any alien into the United States except by ordinary commercial letters, circulars, advertisements, or oral representations, stating the sailings of their vessels and the terms and facilities of transportation therein; and for a violation of this provision any such steamship or transportation company, and any such owners of vessels, and the agents by them employed, shall be subjected to the penalties imposed by the third section of said act of Feb. 26, 1885, for violations of the provisions of the first section of said act.

SEC. 5. That section 5 of said act of Feb. 26, 1885, shall be, and hereby is, amended by adding to the second proviso in said section the words "nor to ministers of any religious denomination, nor persons belonging to any recognized profession, nor professors for colleges and seminaries," and by excluding from

the second proviso of said section the words "or any relative or personal friend."

SEC. 6. That any person who shall bring into or land in the United States by vessel or otherwise, or who shall aid to bring into or land in the United States by vessel or otherwise, any alien not lawfully entitled to enter the United States, shall be deemed guilty of a misdemeanor, and shall, on conviction, be punished by a fine not exceeding \$1,000, or by imprisonment for a term not exceeding one year, or by both such fine and imprisonment.

SEC. 7. That the office of superintendent of immigration is hereby created and established, and the President, by and with the advice and consent of the Senate, is authorized and directed to appoint such officer, whose salary shall be \$4,000 per annum, payable monthly. The superintendent of immigration shall be an officer in the Treasury Department, under the control and supervision of the Secretary of the Treasury, to whom he shall make annual reports in writing of the transactions of his office, together with such special reports, in writing, as the Secretary of the Treasury shall require. The Secretary shall provide the superintendent with a suitably furnished office in the city of Washington, and with such books of record and facilities for the discharge of the duties of his office as may be necessary. He shall have a chief clerk, at a salary of \$2,000 per annum, and two first-class clerks.

SEC. 8. That upon the arrival by water at any place within the United States of any alien immigrants it shall be the duty of the commanding officer and the agents of the steam or sailing vessel by which they came to report the name, nationality, last residence, and destination of every such alien, before any of them are landed, to the proper inspection officers, who shall thereupon go or send competent assistants on board such vessel and there inspect all such aliens, or the inspection officer may order a temporary removal of such aliens for examination at a designated time and place, and then and there detain them until a thorough inspection is made. But such removal shall not be considered a landing during the pendency of such examination.

The medical examination shall be made by surgeons of the Marine Hospital Service. In cases where the services of a marine hospital surgeon can not be obtained without causing unreasonable delay, the inspector may cause an alien to be examined by a civil surgeon, and the Secretary of the Treasury shall fix the compensation for such examinations.

The inspection officers and their assistants shall have power to administer oaths, and to take and consider testimony touching the right of any such aliens to enter the United States, all of which shall be entered of record. During such inspection after temporary removal the superintendent shall cause such aliens to be properly housed, fed, and cared for, and also, in his discretion, such as are delayed in proceeding to their destination after inspection.

All decisions made by the inspection officers or their assistants touching the right of any alien to land, when adverse to such right, shall be final unless appeal be taken to the superintendent of immigration, whose action shall be subject to review by the Secretary of the Treasury. It shall be the duty of the aforesaid officers and agents of such vessel to adopt due precautions to prevent the landing of any alien immigrant at any place or time other than that designated by the inspection officers, and any such officer or agent or person in charge of such vessel who shall either knowingly or negligently land or permit to land any alien immigrant at any place or time other than that designated by the inspection officers, shall be deemed guilty of a misdemeanor and punished by a fine not exceeding \$1,000, or by imprisonment for a term not exceeding one year, or by both such fine and imprisonment.

That the Secretary of the Treasury may prescribe rules for inspection along the borders of Canada, British Columbia, and Mexico so as not to obstruct, or

unnecessarily delay, impede, or annoy passengers in ordinary travel between said countries: *Provided*, That not exceeding one inspector shall be appointed for each customs district, and whose salary shall not exceed \$1,200 per year.

All duties imposed and powers conferred by the second section of the act of Aug. 3, 1882, upon State commissioners, boards, or officers acting under contract with the Secretary of the Treasury shall be performed and exercised, as occasion may arise, by the inspection officers of the United States.

SEC. 9. That for the preservation of the peace and in order that arrests may be made for crimes under the laws of the States where the various United States immigrant stations are located, the officials in charge of such stations, as occasion may require, shall admit therein the proper State and municipal officers charged with the enforcement of such laws, and for the purposes of this section the jurisdiction of such officers and of the local courts shall extend over such stations.

SEC. 10. That all aliens who may unlawfully come to the United States shall, if practicable, be immediately sent back on the vessel by which they were brought in. The cost of their maintenance while on land, as well as the expense of the return of such aliens, shall be borne by the owner or owners of the vessel on which such aliens came; and if any master, agent, consignee, or owner of such vessel shall refuse to receive back on board the vessel such aliens, or shall neglect to detain them thereon, or shall refuse or neglect to return them to the port from which they came, or to pay the cost of their maintenance while on land, such master, agent, consignee, or owner shall be deemed guilty of a misdemeanor, and shall be punished by a fine not less than \$300 for each and every offense; and any such vessel shall not have clearance from any port of the United States while any such fine is unpaid.

SEC. 11. That any alien who shall come into the United States in violation of law may be returned, as by law provided, at any time within one year thereafter, at the expense of the person or persons, vessel, transportation company, or corporation bringing such alien into the United States, and if that can not be done, then at the expense of the United States; and any alien who becomes a public charge within one year after his arrival in the United States from causes existing prior to his landing therein shall be deemed to have come in violation of law and shall be returned as aforesaid.

SEC. 12. That nothing contained in this act shall be construed to affect any prosecution or other proceedings, criminal or civil, begun under any existing act or acts hereby amended, but such prosecution or other proceedings, criminal or civil, shall proceed as if this act had not been passed.

SEC. 13. That the circuit and district courts of the United States are hereby invested with full and concurrent jurisdiction of all causes, civil and criminal, arising under any of the provisions of this act; and this act shall go into effect on the first day of April, 1891.

The measure passed the Senate Feb. 27, and was approved by the President March 3, 1891.

Postal Subsidy.—At the first session of this Congress the Senate passed two bills in aid of American shipping. The first, known as the shipping or tonnage bill, provided for the payment to any vessel of more than 500 tons register, whether sail or steam, constructed and owned in the United States, and engaged in the foreign trade, the sum of 15 cents per gross registered ton for the first 500 miles or fraction thereof sailed outward, and the same sum for the first 500 miles or fraction thereof sailed homeward; and 30 cents per gross registered ton for each 1,000 miles sailed thereafter, and *pro rata* for

any distance less than 1,000 miles sailed after the first 1,000 miles. The payments were to continue at that rate for ten years, and thereafter for a second term of nine years at a reduction of 3 cents per year. The second measure was known as the postal subsidy bill, and it authorized the Postmaster-General to enter into contracts for not less than five years, nor more than ten, with American citizens for carrying the mail in American steamships at certain fixed rates of compensation. The opposition to these bills in the House was determined, and it was only with great difficulty that the former was brought up for discussion. It was debated Feb. 26 and 27, 1891, on the usual lines of party argument, and finally it was sent back to the Committee on Merchant Marine and Fisheries, with orders to report forthwith in its place the latter measure, with a reduction of 33 per cent. on the maximum rates of compensation. The postal subsidy bill was reported at once and passed by a vote of 139 yeas to 120 nays—not voting, 70. The following is the text of the measure:

Be it enacted, etc., That the Postmaster-General is hereby authorized and empowered to enter into contract for a term not less than five nor more than ten years in duration, with American citizens; for the carrying of mails on American steamships, between ports of the United States and such ports in foreign countries, the Dominion of Canada excepted, as in his judgment will best subserve and promote the postal and commercial interests of the United States, the mail service on such lines to be equitably distributed among the Atlantic, Mexican Gulf, and Pacific ports. Such contracts shall be made with the lowest responsible bidder for the performance of said service on each route, and the Postmaster-General shall have the right to reject all bids not in his opinion reasonable for the attaining of the purposes named.

SEC. 2. That before making any contract for carrying ocean mails in accordance with this act the Postmaster-General shall give public notice by advertising once a week for three months in such daily papers as he shall select in each of the cities of Boston, New York, Philadelphia, Baltimore, New Orleans, St. Louis, Charleston, Norfolk, Savannah, Galveston, and Mobile, and when the proposed service is to be on the Pacific Ocean, then in San Francisco, Tacoma, and Portland. Such notice shall describe the route, the time when such contract will be made, the duration of the same, the size of the steamers to be used, the number of trips a year, the times of sailing, and the time when the service shall commence, which shall not be more than three years after the contract shall be let. The details of the mode of advertising and letting such contracts shall be conducted in the manner prescribed in chapter viii of Title XLVI of the Revised Statutes for the letting of inland mail contracts so far as the same shall be applicable to the ocean mail service.

SEC. 3. That the vessels employed in the mail service under the provisions of this act shall be American-built steamships, owned and officered by American citizens, in conformity with the existing laws, or so owned and officered and registered according to law; and upon each departure from the United States the following proportion of the crew shall be citizens of the United States, to wit: During the first two years of such contract for carrying the mails, one fourth thereof; during the next three succeeding years, one third thereof; and during the remaining time of the continuance of such contract at least one half thereof; and shall be constructed after the latest and most approved types, with all the modern improvements and appliances for ocean steamers. They shall be divided into four classes. The first class shall be iron or steel screw steamships, capable of maintaining a speed of

20 knots an hour at sea in ordinary weather, and of a gross registered tonnage of not less than 8,000 tons. No vessel except of said first class shall be accepted for said mail service under the provisions of this act between the United States and Great Britain.

The second class shall be iron or steel steamships, capable of maintaining a speed of 16 knots an hour at sea in ordinary weather, and of a gross registered tonnage of not less than 5,000 tons. The third class shall be iron or steel steamships, capable of maintaining a speed of 14 knots an hour at sea in ordinary weather, and of a gross registered tonnage of not less than 2,500 tons. The fourth class shall be iron or steel or wooden steamships, capable of maintaining a speed of 12 knots an hour at sea in ordinary weather, and of a gross registered tonnage of not less than 1,500 tons. It shall be stipulated in the contract or contracts to be entered into for the said mail service that said vessels may carry passengers with their baggage in addition to said mails, and may do all ordinary business done by steamships.

SEC. 4. That all steamships of the first, second, and third classes employed as above and hereafter built shall be constructed with particular reference to prompt and economical conversion into auxiliary naval cruisers, and according to plans and specifications to be agreed upon by and between the owners and the Secretary of the Navy, and they shall be of sufficient strength and stability to carry and sustain the working and operation of at least four effective rifled cannon of a caliber of not less than 6 inches, and shall be of the highest rating known to maritime commerce. And all vessels of said three classes heretofore built and so employed shall, before they are accepted for the mail service herein provided for, be thoroughly inspected by a competent naval officer or constructor detailed for that service by the Secretary of the Navy; and such officer shall report, in writing, to the Secretary of the Navy, who shall transmit said report to the Postmaster-General; and no such vessel not approved by the Secretary of the Navy as suitable for the service required shall be employed by the Postmaster-General as provided for in this act.

SEC. 5. That the rate of compensation to be paid for such ocean mail service of the said first-class ships shall not exceed the sum of \$4 a mile, and for the second-class ships \$2 a mile, by the shortest practicable route, for each outward voyage; for the third-class ships shall not exceed \$1 a mile, and for the fourth-class ships two thirds of \$1 a mile for the actual number of miles required by the Post-Office Department to be traveled on each outward-bound voyage: *Provided*, That in the case of failure from any cause to perform the regular voyages stipulated for in said contracts, or any of them, a *pro rata* deduction shall be made from the compensation on account of such omitted voyage or voyages; and that suitable fines and penalties may be imposed for delays or irregularities in the due performance of service according to the contract, to be determined by the Postmaster-General: *Provided further*, That no steamship so employed and so paid for carrying the United States mails shall receive any other bounty or subsidy from the Treasury of the United States.

SEC. 6. That upon each of said vessels the United States shall be entitled to have transported, free of charge, a mail messenger, whose duty it shall be to receive, sort, take in charge, and deliver the mails to and from the United States, and who shall be provided with suitable room for the accommodation of himself and the mails.

SEC. 7. That officers of the United States Navy may volunteer for service on said mail vessels, and when accepted by the contractor or contractors may be assigned to such duty by the Secretary of the Navy whenever in his opinion such assignment can be made without detriment to the service, and while in said employment they shall receive furlough pay from the Government, and such other compensation from the contractor or contractors as may be agreed upon by the parties: *Provided*, That they shall only

be required to perform such duties as appertain to the merchant service.

SEC. 8. That said vessels shall take, as cadets or apprentices, one American-born boy under twenty-one years of age for each 1,000 tons gross register, and one for each majority fraction thereof, who shall be educated in the duties of seamanship, rank as petty officers, and receive such pay for their services as may be reasonable.

SEC. 9. That such steamers may be taken and used by the United States as transports or cruisers, upon payment to the owners of the fair actual value of the same at the time of the taking, and if there shall be a disagreement as to the fair actual value between the United States and the owners, then the same shall be determined by two impartial appraisers, one to be appointed by each of said parties, they at the same time selecting a third, who shall act in said appraisement in case the two shall fail to agree.

The Senate passed the bill on March 2, and the President approved it on March 3.

Cattle Inspection.—On March 2, 1891, the House passed the following measure as an amendment by way of substitute to the Senate bill for cattle inspection passed at the first session of the Congress:

Be it enacted, etc., That the Secretary of Agriculture shall cause to be made a careful inspection of all cattle intended for export to foreign countries from the United States, at such times and places, and in such manner, as he may think proper, with a view to ascertain whether such cattle are free from disease; and for this purpose he may appoint inspectors, who shall be authorized to give an official certificate clearly stating the condition in which such animals are found, and no clearance shall be given to any vessel having on board cattle for exportation to a foreign country unless the owner or shipper of such cattle has a certificate from the inspector herein authorized to be appointed, stating that said cattle are sound and free from disease.

SEC. 2. That the Secretary of Agriculture shall also cause to be made a careful inspection of all live cattle the meat of which is intended for exportation to any foreign country, at such times and places, and in such manner, as he may think proper, with a view to ascertain whether said cattle are free from disease and their meat sound and wholesome, and may appoint inspectors, who shall be authorized to give an official certificate clearly stating the condition in which such cattle and meat are found; and no clearance shall be given to any vessel having on board any fresh beef for exportation to and sale in a foreign country from any port of the United States until the owner or shipper shall obtain from an inspector appointed under the provisions of this act such certificate.

The Secretary of Agriculture shall cause to be inspected prior to their slaughter all cattle, sheep, or hogs which are subjects of interstate commerce, and which are to be slaughtered at slaughter-houses, canning, salting, packing, or rendering establishments in any State or Territory, all carcasses, the products of which are to be exported and sold for human consumption into any other State or Territory or the District of Columbia; and in addition to the aforesaid inspection there may be made in all cases where the Secretary may deem necessary or expedient, under rules and regulations to be by him prescribed, a post-mortem examination of the carcasses of all cattle, sheep, and hogs about to be prepared for human consumption at any slaughter-house, canning, salting, packing, or rendering establishment in any State or Territory or the District of Columbia, which are the subjects of interstate commerce.

SEC. 4. That said examination shall be made in the manner provided by rules and regulations to be prescribed by the Secretary of Agriculture; and after said examination the carcasses and products of all

cattle, sheep, and swine found to be free of disease, and wholesome, sound, and fit for human food, shall be marked, stamped, or labeled for identification as may be provided by said rules and regulations of the Secretary of Agriculture.

Any person who shall forge, counterfeit, or knowingly and wrongfully alter, deface, or destroy any of the marks, stamps, or other devices provided for in the regulations of the Secretary of Agriculture, of any such carcasses or their products, or who shall forge, counterfeit, or knowingly and wrongfully alter, deface, or destroy any certificate provided in said regulations, shall be deemed guilty of a misdemeanor, and on conviction thereof shall be punished by a fine not exceeding \$1,000, or imprisonment not exceeding one year, or by both said punishments in the discretion of the court.

SEC. 5. That it shall be unlawful for any person to transport from one State or Territory or the District of Columbia into any other State or Territory or the District of Columbia, or for any person to deliver to another for transportation from one State or Territory or the District of Columbia into another State or Territory or the District of Columbia the carcasses of any cattle, sheep, or swine, or the food products thereof, which have been examined in accordance with the provisions of sections 3 and 4 of this act, and which on said examination have been declared by the inspector making the same to be unsound or diseased. Any persons violating the provisions of this section shall be deemed guilty of a misdemeanor and punished for each offense as provided in section 4 of this act.

SEC. 6. That the inspectors provided for in sections 1 and 2 of this act shall be authorized to give official certificates of the sound and wholesome condition of the cattle, sheep, and swine, their carcasses and products, described in sections 3 and 4 of this act, and one copy of every certificate granted under the provisions of this act shall be filed in the Department of Agriculture, another copy shall be delivered to the owner or shipper, and when the cattle, sheep, and swine, or their carcasses and products are sent abroad, a third copy shall be delivered to the chief officer of the vessel on which the shipment shall be made.

SEC. 7. That none of the provisions of this act shall be so construed as to apply to any cattle, sheep, or swine slaughtered by any farmer upon his farm, which may be transported from one State or Territory or the District of Columbia into another State or Territory or the District of Columbia: *Provided, however,* That if the carcasses of such cattle, sheep, or swine go to any packing or canning establishment and are intended for transportation to any other State or Territory or the District of Columbia as hereinbefore provided, they shall there be subject to the post-mortem examination provided for in sections 3 and 4 of this act.

The Senate concurred in the House amendment, and the President approved the measure, March 3.

Free Coinage.—One of the much discussed measures in this session of the Congress was that "to provide against a contraction of the currency." It was brought up in the Senate Dec. 30, 1890, and was reported from the Finance Committee in the following form:

Be it enacted, etc., That the Secretary of the Treasury is hereby directed to purchase from time to time, during the calendar year 1891, silver bullion to the aggregate of 12,000,000 ounces at the market price thereof, not exceeding \$1 for 371.25 grains of pure silver, in addition to the amount required to be purchased by the act approved July 14, 1890, entitled "An Act directing the purchase of silver bullion and the issue of Treasury notes thereon, and for other purposes," of which sum of 12,000,000 ounces there shall be purchased, at the discretion of the Secretary of the Treasury, not exceeding 2,000,000 ounces in

any one month; and the Secretary of the Treasury shall issue in payment for such purchases of silver bullion Treasury notes of the United States of the same form and description and having the same legal qualities as the notes provided for by the said act. And such Treasury notes shall be a legal tender and be received, redeemed, and reissued in the same manner and to the same extent as other Treasury notes.

SEC. 2. That the compulsory requirement of deposits of United States bonds with the Treasurer of the United States by national banks having a capital of not more than \$50,000 is hereby limited in amount to \$1,000 of bonds for each and every national bank: *Provided,* That the voluntary withdrawal of bonds for the retirement of such national-bank notes shall not exceed the sum of \$3,000,000 in any one month: *And provided further,* That this act shall not apply to the deposits of bonds which may be required by the Secretary of the Treasury to secure deposits of public moneys in the national banks.

SEC. 3. That upon any deposits already or hereafter made of any United States bonds bearing interest, in the manner required by law, any national banking association making the same shall be entitled to receive from the Comptroller of the Currency circulating notes of different denominations, in blank, registered and countersigned as provided by law, not exceeding in the whole amount the par value of the bonds deposited: *Provided,* That at no time shall the total amount of such notes issued to any such association exceed the amount at such time actually paid in of its capital stock.

SEC. 4. That the Secretary of the Treasury is hereby authorized to issue, in a sum or sums not exceeding in the aggregate \$200,000,000, coupon or registered bonds of the United States, in such form as he may prescribe, and of denominations of \$50 or some multiple of that sum, redeemable in lawful money at the pleasure of the United States, on and after July 1, 1900, and bearing interest payable semi-annually in such money at the rate of 2 per cent. per annum. And he is authorized to sell or dispose of any of the bonds issued under this act at not less than their par value for any lawful money of the United States, or for gold or silver certificates, and to apply the proceeds thereof to the redemption of or to the purchase of any of the bonds of the United States, and for no other purpose whatever. And a sum necessary to pay the expense of preparing, issuing, advertising, and disposing of said bonds is hereby appropriated out of any money in the Treasury not otherwise appropriated.

SEC. 5. Whenever the market price of silver bullion shall have been continuously for a period of one year \$1 or more for 371.25 grains of pure silver all purchasing of silver bullion by the Secretary of the Treasury shall cease, and thereupon and thereafter any owner of silver bullion not too base for the operations of the mint may deposit the same in amounts of the value of not less than \$100 at any mint of the United States to be formed into standard dollars or bars for his benefit and without charge; and at the said owner's option he may receive instead the equivalent thereof in the Treasury notes of the said act approved July 14, 1890.

SEC. 6. That the Secretary of the Treasury be, and he is hereby, authorized to cause the subsidiary silver coins of the United States now in or which may hereafter be received into the Treasury and subtreasuries of the United States, which are abraded, worn, mutilated, defaced, or otherwise unfit for circulation, or are of denominations for which there is no current demand, to be recoined at the mints of the United States into such denominations of silver coins now authorized by law as may be required to meet the demand therefor. That the loss incident to the recoinage of such uncurrent silver coins into new coins shall be paid from the gain arising from the coinage of silver bullion into coin of a nominal value exceeding the cost thereof, denominated "the silver profit fund."

SEC. 7. The Secretary of the Treasury is hereby authorized and directed to issue Treasury notes of the act approved July 14, 1890, to an amount equal to the market value of the bullion made from the trade dollars now in the Treasury, and of the bullion to be formed from other trade dollars, and also upon the bullion value of 10,000,000 of the abraded and otherwise uncurrent subsidiary silver coin now in the Treasury.

SEC. 8. That paragraph 8 of chapter cccxxvii of the Supplement to the Revised Statutes of the United States, which requires that refining and parting of bullion shall be carried on at the mints of the United States and at the assay office at New York, be amended by inserting, after the word "law" in the fourth line, the following words: "and from the proceeds of the sale of by-products resulting from the operations of the refinery," so that the paragraph shall read:

"And it shall be lawful to apply the moneys arising from charges collected from depositors for these operations pursuant to law, and from the proceeds of the sale of by-products resulting from the operations of the refinery, so far as may be necessary, to the defraying in full of the expenses thereof, including labor, materials, and wastage."

SEC. 9. That an act to authorize the receipt of United States gold coin in exchange for gold bars, approved May 26, 1882, be amended to read as follows:

"That the superintendents of the coinage mints and of the United States assay office at New York may, with the approval of the Director of the Mint, but not otherwise, receive United States gold coin from any holder thereof, in sums of not less than \$5,000, and pay and deliver in exchange therefor gold bars in value equaling such coin so received: *Provided*, That the Director of the Mint, with the approval of the Secretary of the Treasury, may impose for such exchange a charge which in his judgment shall equal the cost of manufacturing the bars."

SEC. 10. That it is the continued policy of the United States to use both gold and silver as full legal-tender money under the ratio now existing in the United States, or that may be hereafter established by the United States, acting in accord with other nations; and the United States is willing to join with other commercial nations in a conference to adopt a common ratio between gold and silver, with a view of establishing, internationally, the use of both metals as full legal-tender money, and securing fixity of relative value between them. And when, in the judgment of the President, a sufficient number of such nations shall have entered into such international arrangement he may declare the ratio so fixed to be the existing ratio in the United States, and all coinage thereafter shall be at such ratio until changed by law. The President shall, by and with the advice and consent of the Senate, appoint commissioners, not exceeding three, who shall attend any such conference on behalf of the United States, and they shall report their doings to the President, who shall transmit the same to Congress. Said commissioners shall receive the sum of \$5,000 each and their reasonable expenses, to be approved by the Secretary of State; and the amount necessary to pay such compensation and expenses is hereby appropriated out of any money in the Treasury not otherwise appropriated.

SEC. 11. That all the acts and parts of acts inconsistent with the provisions of this act be, and the same are hereby, repealed.

Mr. Stewart, of Nevada, submitted an amendment involving free coinage, and supported that policy in an elaborate speech. Among other things, he said:

"The scheme reported by the Finance Committee is another dose of the ordinary quack medicine prescribed by dealers in money for financial disorders which their previous prescriptions have produced. The silver men propose a return to

the ancient remedy which has been used for thousands of years and never failed to cure when the mines of gold and silver were productive. The yield of the two precious metals combined will furnish a sound currency for the present, and may be sufficient in quantity for an indefinite time. It will certainly give time to discover some other remedy, if any exists, to prevent contraction if the mines should again fail.

"The shock to civilization produced by the demonetization of silver has not been barren of results. Usurers and gamblers in money by this great outrage have attracted public attention to the methods by which they rob and enslave the masses. Theoretically every government in the civilized world is empowered to make money, and it was assumed that this sovereign authority was really exercised in the interest of the people. It is now seen that a ring of parasites at every capital city in the United States and Europe has from time immemorial had exclusive control of the law-making power, and has created or destroyed the circulating medium as would best serve the purposes of extortion."

Mr. Reagan, of Texas, gave notice of an amendment for the same purpose. He said:

"The coinage of dollars was suspended by the act of 1873, and the silver dollar was then substantially retired from use as a part of our money. Silver had been a part of our constitutional currency, at par with gold, and a unit of value from the time of the passage of the act of 1792 until the passage of the act of 1873.

"The passage of the act demonetizing the silver dollar inflicted on this country greater injury than was probably ever inflicted on this or any other country by a single act of legislation. It caused a reduction of values of all property and products about 33 per cent. It took from the people the use of about one half of the metal money of the country, and it increased the burdens of all indebtedness from one third to one half.

"This was done in the face of the fact that the United States was then, as now, the greatest silver-producing country in the world, producing more than 40 per cent. of all the silver being mined in the world. It was done in the face of the fact that the United States was at that time one of the great debtor nations of the world, our national debt then being about \$2,500,000,000; when most of the States were large debtors; when most of the municipal corporations of the country were largely indebted; when the railroad corporations of the country owed three or four billions of dollars, most of their obligations being held in Europe, and when other corporations and private citizens were largely indebted, for we had before that time an abundant currency, business had been active, and credits extensive. This was done, too, in the face of the fact that our people had millions of dollars engaged in the silver mining, in which business tens of thousands of our people found employment which furnished support for hundreds of thousands of other people. One of the consequences of this demonetization of silver was that after the fall of prices caused by it it required double the amount of the products of the soil, double the number of days' work, to pay either the public or the private indebtedness of the country.

"That that act was inspired by the selfish greed of bondholders, monometallists, and money-holders I think there can be no doubt. That it was the deliberate purpose on their part (whether understood by members of the two Houses or not, I know not) to sacrifice the interest of the great body of the people in order, by an unjust and iniquitous law, to promote their own fortunes there can be no doubt. No such legislative crime, in my opinion, has ever been committed in this country; and I do not know in the history of any legislation a crime of equal magnitude to it.

"The passage of such an act under circumstances that show that neither the House of Representatives nor the Senate understood it, passed substantially without discussion—for the special question of demonetizing silver was not discussed in either House—is a thing that ought to attract the profound attention of the American people, and it did not fail to attract their profound attention when they came to know what had been done in this respect. And from the time the people came to know what had been done in the demonetization of silver they commenced the struggle to restore its coinage; at least they commenced that struggle as soon as the Democracy of the country got the control of the House of Representatives, and that struggle was kept up until, in 1878, the House of Representatives passed a bill providing for the free and unlimited coinage of silver. That bill came to the Senate, and was so amended as to strike out the provisions for free coinage and to substitute one authorizing the Government to purchase not more than four million nor less than two million dollars' worth of silver per month, and to coin that.

"That act, instead of making silver a unit of value and money, as it had stood from the time of the passage of the act of 1792 to the passage of the act of 1873, made silver a commodity which, like wheat or cotton, or other products of the soil, was to be valued by its gold value, and not allowed to possess the money value which it had possessed before that value was taken from it by the act of 1873.

"But the people were not content with this disposition of the question, and the struggle was kept up from year to year until last year, when we passed another bill which made some concession to the demands of the people of this country, but still preserved silver as a commodity to be valued by gold and did not make it money. That that was done in the interest of the bondholders and moneyed class, and against the interest of the great body of the people, I think there can be no doubt.

"Now, again, Mr. President, the question comes back to us—as I stated in the Senate a year ago in debate upon this question that it would come back and continue to come back until justice should be done and until silver can be restored to the place it occupies under the Constitution and in the traditions of this country side by side with gold."

Mr. Sherman, of Ohio, said, in opposition to free coinage:

"With a silver supremacy gold would no longer be in sight as money, but would be held as a commodity to be sold to the highest bidder,

and the stock of gold, being on Nov. 1, 1890, as stated by the Director of the Mint, \$624,010,285, is so large, being nearly twice as large as that of silver, that its sudden withdrawal from use as money would create a contraction possibly of greater stringency than has ever been known by our people. The one hundred and seventy-five millions of gold certificates outstanding, covering gold in the Treasury, may at any moment drop out of circulation, if not already hoarded. Of course the clouds now hovering over us, even with a silver lining, do not fail to be widely regarded as portentous.

"The production of gold in the world in 1889 was \$118,832,000, being more than in any year save one since 1873; and the amount of gold received at our mints and assay offices every year from 1880 to 1889, inclusive, has far exceeded that of silver, being \$612,526,877 of gold and only \$379,046,208 of silver. Notwithstanding large exports of gold last year our present stock is supposed to equal that of all Europe. Yet one would infer from the tenor of the debate that gold was about as near extinction on the American Continent as the buffalo, and say 'nobody ever sees it.' The vitriolic denunciations of gold which periodically leap out here clearly indicate that nothing less than the absolute domination of silver and the expulsion of gold from our country is the real and supreme object aimed at. It is my deliberate opinion, however, shared by business men generally, that whenever a practical divorce between gold and silver shall occur in the United States, silver will have lost its most powerful friend, and will suffer greater degradation in its commercial and money value than it has recently experienced.

"One subterranean purpose can not be concealed, though softly denied, and that is to scale all debts, public and private, or to supply medium for their liquidation at a cost largely reduced from that required and existing at the time of the original contracts.

"At the last session of Congress it was often urged that if the Secretary of the Treasury had only purchased to the full limit of law the \$4,000,000 worth of silver instead of two millions per month everything would have been lovely, money plentiful, silver at par, and the silver goose cooked, and that no further demand in behalf of silver or anything else would have been made. The new law, therefore, was passed for the purchase of 4,500,000 ounces of pure silver per month, equal in coinage value to more than \$5,000,000 per month, or over sixty millions annually, and yet the cry here is now more vociferous than ever for more, for a larger dose. Not even the permanent and high-salaried national Executive Silver Committee, long planted as the advisers of Congress on Pennsylvania Avenue, will jog one and nudge another and claim that the Secretary of the Treasury has been a laggard, or that he has not purchased all the silver possible under the latest law, and yet the contest of the silver men for more is like that of Macbeth:

"Damned be him that first cries, 'Hold, enough!'

"It may be well to probe the silver problem to the bottom—to discover, if possible, its merits. It is now manifest that the Government's purchase and locking up of one half of the an-

nual silver product of the world has not promoted the increase of its value, which to-day is fully four cents per ounce less than it was on the passage of the silver act of the last session, though its price then had been lifted by the general anticipation of some such measure. It is now urged that the United States markets and mints shall be opened to the whole silver product of the world. The patient is either to be cured or killed. The audacity of such an experiment solely at our risk, it appears to me, is more conspicuous than its financial soundness. It can not be possible to hold the price of silver in America at from 15 to 30 per cent. above its price in Europe. Yet we are asked to attempt this miracle, as if it were a very little thing.

"There is much uncertainty whether or not our action may not encourage all European nations to further depreciate the value of silver by wholly discarding its use except as subsidiary coinage. If silver is in purgatory now, it will not do, by our further action, to sink it to hades, where it would be past praying for. All the silver States, except Nevada, have interests paramount to that of silver, and that of itself is believed to be more prosperous than any industry of all other States. Its price very likely for a brief time might be increased by some extravagant act of Congress—a bomb of great noise and hollow sound—but, if our massive present accumulations were to be so broadly extended as to bring about such a short-lived result, would it be any more justifiable than the buying and hoarding for a higher price the entire crop of cotton, tobacco, wheat, or corn, iron, or tobacco?"

"If we consent to the issue of United States Treasury notes on silver, why refuse them on land? Some large profits would doubtless accrue to the rich owners of silver mines by free coinage until the coin itself should drop to the level of the commercial value of silver bullion, but every farthing of these large profits realized above the commercial value would be at the loss of the Government, and, therefore, at the loss of the people. For the sake of argument let it be admitted that there is a temporary need of an increase of circulating currency, yet the proposition is not merely to bridge over a fleeting exigency by pouring out a flood to satisfy a sudden thirst, but the design is to pour out a continuous flood for all time to come. The Government is to take all the silver offered at a fixed price forever, being a dollar for each 371½ grains, and payable by the issue of legal-tender notes, whether more currency shall be needed or not, the increase not being based upon any reasonable or probable ratio of the increase of population or business. Large power and advantage would accrue to the happy owners of silver, to whom legal-tender paper by millions must be exclusively issued for their silver bullion, but in the end that advantage would perish in the general disaster that would overtake the whole country by the vain attempt of men to increase their property by computing it in a cheap dollar."

Mr. Teller, of Colorado, argued against the notion that free coinage would result in silver imports:

"I have asserted over and over again for ten years that there is no country in the world that wants to part with its silver, save and except

Germany, and Germany parted with so much of it that all the agricultural interests of Germany were in arms against the further parting with it. When they made their appeal to Bismarck, Bismarck said, 'We have already too much water in the soup, and it is too thin.' He said on another occasion: 'Too many people are pulling for this gold blanket, and somebody has got to be left out in the cold if you attempt to cover yourselves with gold alone.'

"Now, Mr. President, I insist that a proposition that is simply a return to the financial system that has been in vogue all over the world for the last two or three hundred years at least, in the use of metal that has been thus in common use as money, I say that it is incumbent on the opponents of that proposition to come here with something besides, as I said, declamation, assertion, and prophecy, and that is all they have ever come here with.

"Mr. President, there has never been an argument made here during the years I have been a member of this body that has deserved the name of argument to show that the fears of these dangers to result have the slightest foundation. It has been ignorant assertion on the part of the opponents of the measure, which they can not prove and do not attempt to prove. I challenge the gentlemen who take that side in this discussion, and who are asserting that there is danger in this proposition, to tell us wherein that danger lies. If there is a troop threatening danger, who is the captain of the troop, who heads it, and under what banner does it come?"

"They tell us Spain will send it here, that France will send it here, when the whole history of the world is against their assertion, more particularly when they touch France than any other country in the world. If Senators think that India would adopt the gold standard and abandon silver they reckon without their host, for the British power made them abandon the gold standard, which they did years ago and adopted silver, because it was to the interest of the British Government that they should have that silver standard. And it is to their interest to-day, and you could no more get the British Government to consent that India should abandon silver and establish a gold standard than you could get her to agree to abandon gold and adopt silver in their own country—not a particle."

Mr. Evarts, of New York, defended the legislation of the previous session: "Mr. President, there is nothing whatever that should change our satisfaction with the resolution that we came to in July last. If we have been disappointed in there being less activity on the part of the Executive in promoting by diplomatic means an opportunity of a resolution of this great difficulty abroad, we have found nothing in the experience of this country that could show us that we erred when we took our stand then, or that we should now be any wiser than we would have been if we had undertaken free coinage."

"Mr. President, the people of this country, the people of commercial countries in Europe, can not hide from themselves the severity of this relation, putting these two metals so wide apart, as was accomplished by the sequel of what happened in 1873. All invective against the errors of Germany and the errors in our legislation do

not bring us any nearer to the solution of the mischief that was wrought on all the methods and the gradual approaches by which this great consummation can be reached. Impatience is no teacher. Experience is the only teacher by which we should be guided. And now, without disturbance of either foreign exchanges or domestic derangement, we, under the wise result that we reached six months ago, are asked to take this action merely from impatience, because the cure could only be in some degree as long as the evil had progressed.

"Mr. President, as I insisted then, so I must insist now, the great enemy of the effort for the parity of the metals in the affairs of the world is this rash patronage of the silver mines that makes a prominent and easy but an obvious suggestion of activity in that direction. I know, and I appreciate the fact, that those who favor the two metals as I do are not governed by a desire to patronize the mines; but, nevertheless, those who avow both an interest, as we all feel, in the patronage of the products of the mines as of the fields in our country, with a concurrent interest and duty on their part to restore an equality between the metals in the world at large, should not suffer their counsels and their hopes and their plans to be so biased and overclouded by the lesser interests that they will not take counsel from the larger sphere of the experience of the nation, which is the only one that we can learn a lesson from.

"Mr. President, it is enough for me to say that for my guidance the intent or casual influences in this or that derangement of the affairs in our great cities or in our European relations are no counsel for us at all. Just as long as Congress sits, just so long in this country if Congress does not become wise enough to turn its face against them, there will be efforts to make this Government a bank, not only of issue and deposit, but of discount, and I know no more paltry legislation than that by which the two Houses of Congress are to be appealed to at every juncture of our affairs, however local, however temporary, or however serious, that we are to be resolved into a board of bank directors or the managers of a clearing house. No, just as soon as Congress adjourned with the two metals on the basis in which we placed them six months ago and with such liberalization as is proposed in the enlargement of the paper issues of the country either by banks or in the Treasury or in the tender notes, the country will go on and on.

"What have we seen that has already come to our advantage in regard to the value of silver? It has risen as it now stands to 105, something over 80 cents in the dollar, when we started from it at something like 70 cents, and if there was a miscalculation, or if the combinations of speculators suddenly forced up the price, and the country or the people were disappointed at the suddenness of relief being followed by a recoil, that does not teach us to abandon the wisdom by which we are to move step by step, maintaining our own control of the situation and not plunge by an irrevocable step in a disaster from which we can not retreat.

"No, Mr. President, this is our position now, as it was six months ago, and we are waiting and must expect to wait a slow procession toward

the goal at which we aim, and that is a restoration of the parity of silver and gold in the money of the world."

The measure was variously amended in the Senate, and, finally, on Jan. 14, 1891, the following substitute was adopted and passed:

S. 4675. A bill to provide against the contraction of the currency, and for other purposes:

That from and after the date of the passage of this act the unit of value in the United States shall be the dollar, and the same may be coined of 412½ grains of standard silver, or of 25·8 grains of standard gold, and the said coin shall be a legal tender for all debts, public and private. That hereafter any owner of silver or gold bullion may deposit the same at any mint of the United States, to be formed into standard dollars or bars for his benefit and without charge; but it shall be lawful to refuse any deposit of less value than \$100 or any bullion so base as to be unsuitable for the operations of the mint.

SEC. 2. That the provision of section 3 of "An Act to authorize the coinage of the standard silver dollar and to restore its legal-tender character," which became a law Feb. 28, 1878, is hereby made applicable to the coinage in this act provided for.

SEC. 3. That the certificates provided for in the second section of this act shall be of denominations of not less than one or more than one hundred dollars, and such certificate shall be redeemable in coin of standard value. A sufficient sum to carry out the provisions of this act is hereby appropriated out of any money in the Treasury not otherwise appropriated. So much of the act of July 14, 1890, entitled "An Act directing the purchase of silver bullion and the issue of Treasury notes thereon, and for other purposes," as requires the purchase of 4,500,000 ounces of silver bullion per month, be, and the same is hereby, repealed.

SEC. 4. That the certificates provided for in this act and all silver and gold certificates already issued shall be receivable for all taxes and dues to the United States of every description, and shall be a legal tender for the payment of all debts, public and private.

SEC. 5. The owners of bullion deposited for coinage shall have the option to receive coin or its equivalent in the certificates provided for in this act and such bullion shall be subsequently coined.

The vote on the passage of the bill was as follows:

YEAS—Allen, Barbour, Bate, Berry, Blackburn, Butler, Cameron, Cockrell, Coke, Daniel, Eustis, Faulkner, Gibson, Gorman, Hampton, Ingalls, Jones of Arkansas, Jones of Nevada, Kenna, McConnell, Manderson, Mitchell, Morgan, Paddock, Pasco, Power, Pugh, Reagan, Sanders, Shoup, Stanford, Stewart, Teller, Turpie, Vance, Vest, Voorhees, Walthall, Wolcott—39.

NAYS—Aldrich, Allison, Carey, Casey, Cullom, Davis, Dixon, Dolph, Edmunds, Evarts, Frye, Hale, Hawley, Higgins, Hiseock, Hoar, McMillan, Platt, Quay, Sawyer, Sherman, Spooner, Stockbridge, Warren, Washburn, Wilson of Iowa, Wilson of Maryland—27.

ABSENT—Blair, Blodgett, Brown, Call, Carlisle, Chandler, Colquitt, Dawes, Farwell, George, Gray, Harris, Hearst, McPherson, Moody, Morrill, Payne, Pettigrew, Pierce, Plumb, Ransom, Squire—22.

The title of the measure was changed to read: "A bill to provide a unit of value, and for the coinage of gold and silver and other purposes." In the House the Committee on Coinage, Weights and Measures reported adversely to the bill, and it fell by the way.

The Federal Election Bill.—No measure considered by this Congress, except the tariff bill, was so voluminous, aroused so much partisan feeling, or was so fully debated as that "to

amend and supplement the election laws of the United States, and to provide for the more efficient enforcement of such laws, and for other purposes." Indeed, the defeat of the measure is considered the greatest triumph gained by the Democrats in the Fifty-first Congress. It was passed at the first session by the House, July 2, 1890, and the Senate postponed its consideration until the second session. It was taken up at the beginning of the session, and occupied the attention of the Senate largely until Jan. 17, 1891. Elaborate speeches were made in opposition to it, and it was clearly the intention of Democratic Senators to talk against time rather than permit the bill to come to a vote. The Republican leaders, to meet this device, proposed an amendment to the Senate rules providing for cutting off debate, "when any bill, or resolution, or other question, shall have been under consideration for a reasonable time, it shall be in order for any Senator to demand that debate thereon shall be closed. On such demand no debate shall be in order, and pending such demand no other motion, except one motion to adjourn, shall be made. If such demand be seconded by a majority of the Senators present, the question shall forthwith be taken thereon, without debate. If the Senate shall decide to close debate on any bill, resolution, or other question, the measure shall take precedence of any other business whatsoever, and the question shall be on all pending

been lost, or shall have failed of a second, it shall not be in order to renew the same until one Senator shall have spoken on the pending measure, or one vote upon the same shall have intervened. Pending proceedings under the foregoing rule, no proceedings in respect to a quorum shall be in order until it shall have appeared upon a division or on taking a yea-and-nay vote that a quorum is not present and voting. All questions of order, whether upon the bill or otherwise, shall be decided without debate, and, pending proceedings under the foregoing rule, no obstructive or dilatory motion or proceedings of any kind shall be in order." This change of rules was limited to the remainder of the session, and there was added to it a resolution applying it to the election bill. The attempt to enforce this *clôture* system failed, and by a combination between the Democrats and several Republican Senators anxious for the adoption of free-coinage legislation the election bill was forced out of the way to take up apportionment and subsequently the free-silver measure. So it came to pass that this measure, which was called by its opponents "the Force bill," failed to become a law.

Appropriations.—The appropriations of the Fifty-first Congress were very heavy, as a whole, and the following table will show the points of increase and decrease as compared with the Fiftieth Congress:

TABLE COMPARING BY ACTS THE APPROPRIATIONS MADE BY THE FIFTIETH AND FIFTY-FIRST CONGRESSES.

PURPOSE OF ACTS.	Fiftieth Congress, fiscal years 1889 and 1890.	Fifty-first Congress, fiscal years 1891 and 1892.	Increase, Fifty-first Congress over Fiftieth Congress.	Decrease, Fifty-first Congress from Fiftieth Congress.
Agricultural.....	\$3,885,750 00	\$4,827,258 50	\$1,441,473 50	
Army.....	48,787,915 78	48,820,000 98	32,085 25	
Diplomatic and consular.....	8,408,490 00	8,367,740 00		\$40,750 00
District of Columbia.....	10,728,820 28	11,866,669 32	687,849 09	
Fortifications.....	5,205,594 00	8,007,738 00	2,802,144 00	
Indian.....	16,841,154 18	23,648,300 88	7,807,146 70	
Legislative, etc.....	41,601,798 88	43,058,427 00	1,456,628 12	
Military Academy.....	1,217,810 50	587,360 75		\$880,449 75
Navy.....	41,685,845 62	55,677,690 81	14,042,844 69	
Pension.....	* 175,017,400 00	+ 288,329,751 69	113,812,351 69	
Post-office.....	127,465,578 02	150,189,921 60	22,664,348 58	
River and harbor.....	29,397,616 20	25,188,295 00	2,788,678 10	
Sundry civil.....	51,618,146 49	67,148,646 21	15,530,499 72	
Deficiencies.....	24,398,901 56	22,667,636 94		1,726,264 62
Miscellaneous.....	20,426,657 84	11,267,436 87		9,159,221 47
Total.....	\$599,692,004 95	\$764,294,868 55	\$181,969,540 44	\$11,806,685 84
Permanent annual.....	224,381,854 85	224,115,261 00		216,598 84
Grand total.....	\$817,968,859 80	\$988,410,129 55	\$161,969,540 44	\$11,528,279 69
Net increase.....		\$170,446,269 75	\$170,446,269 75	

* Includes \$3,500,000 pension deficiencies for 1888, passed at the first session of the Fiftieth Congress, and \$8,000,000 pension deficiencies for 1889, passed at the second session of the Fiftieth Congress.

+ Includes \$25,821,907.35 pension deficiencies for 1890, passed at the first session of the Fifty-first Congress, and \$29,335,508.34 pension deficiencies for 1891, passed at the second session of the Fifty-first Congress.

amendments, if any are then pending, and upon the measure in its successive stages, according to the rules of the Senate, but without further debate, except that every Senator who may desire shall be permitted to speak upon the measure, including all amendments, not more than once and not exceeding thirty minutes. If the Senate shall have decided to close debate as herein provided no motion shall be in order but a motion to adjourn or to take a recess. When such motion shall be seconded by a majority of the Senate, when either of such motions shall have

Minor Measures.—Among the minor measures passed was the bill transferring officers on the retired list of the army from the limited list to the unlimited; the bill for preserving discipline among customs officers; the bill for the relief of mission Indians in California; the bill extending the benefits of the act of Feb. 8, 1887, providing for the allotment of land in severalty to Indians in various reservations; the bill enabling the Secretary of the Interior to carry out the provisions of the act dividing the reservation of the Sioux Indians in Dakota; the bill to pro-

hibit the use of tobacco by minors under the age of sixteen in the District of Columbia; the bill to amend the act for the forfeiture of railroad land grants; the bill to prevent book making and pool selling in the District of Columbia; the bill to provide for the erection of a prison for the confinement of United States prisoners; the bill regulating junk dealers and pawnbrokers in the District of Columbia; the bill to provide for the adjudication of claims arising out of Indian depredations; the bill to promote the construction of a safe deep-water harbor on the coast of Texas; the bill to provide for a United States land court in the Territories; the bill to prevent counterfeiting and provide penalties therefor; the bill for the construction of industrial-school buildings for Indians in Wisconsin and other States; the bill to regulate the granting of leases at Hot Springs, Arkansas; the bill relating to the treaty of reciprocity with the Hawaiian Islands; the bill to facilitate the collection of commercial statistics; the bill for the inspection of vessels in the cattle trade.

Public Buildings.—Bills were passed providing for the construction of public buildings at Portland, Ore.; at Youngstown, Ohio; at St. Paul, Minn.; at Roanoke, Va.; at Norfolk, Va.; at Fort Dodge, Iowa; at Sioux City, Iowa; at Madison, Ind.; at Pawtucket, R. I.; at Sioux Falls, S. D.; at Mankato, Minn.; at Saginaw, Mich.; at Taunton, Mass.; at Stockton, Cal.; at Staunton, Va.; at Kansas City, Mo.; at Beatrice, Neb.; at Lewiston, Me.; at St. Albans, Vt.; at Newburgh, N. Y.; at Worcester, Mass.; at Clarksville, Tenn.; at Rock Island, Ill.; at Haverhill, Mass.; at Racine, Wis.; at New York city; at San Diego, Cal.; at Danville, Ill.; at Philadelphia, Pa.; at Camden, Ark.; at Pueblo, Col.; at Savannah, Ga.; at Bloomington, Ill.; at South Bend, Ind.; at Plattsburgh, N. Y.; at Reidsville, N. C.; at Rome, Ga.; at Akron, Ohio; at Rockford, Ill.; at Fargo, N. D.; at Davenport, Iowa; at Portsmouth, Ohio; at Richmond, Ky.

CONNECTICUT, a New England State, one of the original thirteen: ratified the national Constitution Jan. 9, 1788; area, 4,990 square miles. The population, according to each decennial census, was 237,946 in 1790; 251,002 in 1800; 261,942 in 1810; 275,143 in 1820; 297,675 in 1830; 309,978 in 1840; 370,792 in 1850; 460,147 in 1860; 537,454 in 1870; 622,700 in 1880; and 746,258 in 1890. Capitol, Hartford.

Government.—The following were the State officers during the year: Governor, Morgan G. Bulkeley, Republican, holding over after the expiration of the term for which he was elected, in consequence of the failure of the General Assembly to declare the result of the election of November, 1890, at which his successor was chosen; Lieutenant-Governor, Samuel E. Merwin, Republican; Secretary of State, R. Jay Walsh, Republican; Treasurer, E. Stevens Henry, Republican (the last-mentioned three officials held over under the same tenure as the Governor); Comptroller, Nicholas Staub, Democrat; Secretary of the State Board of Education, Charles D. Hine; Insurance Commissioner, Orsamus R. Fyler; Railroad Commissioners, George M. Woodruff, William H. Haywood, William O. Seymour; Chief Justice of the Supreme Court, Charles B.

Andrews; Associate Justices, Elisha Carpenter, Edward W. Seymour, and David Torrance. There is one vacancy on the Supreme Bench, caused by the failure of the General Assembly to confirm the renomination by Gov. Bulkeley of Judge Dwight Loomis, whose term expired early in the year. The terms of Insurance Commissioner Fyler and Railroad Commissioner Seymour expired on July 1. As the General Assembly refused to confirm the action of Gov. Bulkeley in renominating them, the latter, on July 1, issued an order reappointing them for a period extending till sixty days after the meeting of the next General Assembly. The Democrats claim that these renominations are void, on the ground that Gov. Bulkeley has no right to exercise any of the prerogatives of the Governor's office.

Finances.—For the fiscal year ending July 1, 1891, the State Treasurer makes the following report: Balance in the treasury, July 1, 1890, \$597,674.26; total receipts for the year ensuing, \$1,843,913.71; total expenditures, \$1,757,511.87; balance on July 1, 1891, \$984,076.10. The receipts were derived from the following sources: Tax on mutual insurance companies, \$247,048.18; tax on stock of non-residents, \$90,972.52; savings-bank tax, \$261,753.85; railroad tax, \$817,516.76; military commutation tax, \$123,903.60; tax on investments, \$80,524.47; collateral inheritance tax, \$74,758.23; tax on telegraph companies, \$10,653.46; received from Commissioner of Insurance, \$51,654.52; interest on cash balances in the treasury, \$33,879.66; miscellaneous receipts, \$51,247.76. The one-mill tax on property, which has heretofore been paid by the towns, and which for the year ending June 30, 1890, amounted to \$354,557.65, was remitted this year by the State Treasurer under authority conferred by a statute of 1889. Notwithstanding this loss of revenue, the receipts for the fiscal year exceeded the expenditures by the sum of \$86,401.84.

The State debt was reduced during the year to \$3,440,200 by the redemption on Dec. 1 of bonds of 1887 to the value of \$100,000. An important suit against the New York, New Haven, and Hartford Railroad Company, which involved the right of the State to collect a large amount of taxes claimed to be due, and aggregating about \$100,000, was decided against the State during the year.

Legislative Session and Election Contest.—The General Assembly convened at Hartford on Jan. 7 for its regular biennial session. Each House was divided politically as follows: Senate—Republicans 7, Democrats 17. House—Republicans 133, Democrats 119; the Republicans having a majority of 4 on joint ballot. The Senate was organized on the opening day by the election of David M. Read, Democrat, as President *pro tem.*, and the House by the election of Allan W. Paige, Republican, as Speaker. On the same day the returns of the November election were laid before the House for its action, in accordance with the Constitution. They were referred to a joint committee on canvass of votes, and then transmitted to the Senate. These returns, on their face, indicated the election of the Democratic candidates by the following majorities: Governor, Luzon B. Morris, 26; Lieutenant-Governor, Joseph W. Alsop, 558; Secretary, John

J. Phelan, 544; Treasurer, Marvin H. Sanger, 290; Comptroller, Nicholas Staub, 1,662. (See "Annual Cyclopædia" for 1890, page 242.) They also showed that the local election officers in certain towns and election districts had thrown out many Prohibition and other ballots for alleged technical irregularities; and it was claimed by the Republicans that these ballots, if counted, would so change the result that there would be no choice by the people, because no candidate would have a majority over all opponents. The provisions of the State Constitution governing the action of the General Assembly in this matter are as follow:

A fair list of the persons and number of votes given for each, together with the returns of the presiding officers (of election in each town or district) shall be, by the Treasurer, Secretary, and Comptroller, made and laid before the General Assembly then next to be holden, on the first day of the session thereof.

Said Assembly shall, after examination of the same, declare the person whom they shall find to be legally chosen, and give him notice accordingly.

If no person shall have a majority of the whole number of said votes, or if two or more shall have an equal and the greatest number of said votes, then said Assembly, on the second day of their session, by joint ballot of both Houses, shall proceed without debate to choose a Governor from a list of the names of the two persons having the greatest number of votes, or of the names of the persons having an equal and highest number of votes so returned as aforesaid.

It appears from the above-quoted provisions that the General Assembly shall *examine* the returns and declare the persons whom it finds legally chosen. The question that arose at this time, on which the two parties were divided, was, how extensive an examination of the returns was contemplated by this language of the Constitution. The Senate, immediately after organizing, declared the Democratic position in the following resolution, which was sent to the House for concurrence, and was there referred to a committee:

Resolved, That the provisions of the Constitution . . . clearly prohibit any revision by the General Assembly of the conduct of the several electors' meetings, and any alteration of the count of ballots as made by the officers of the several electors' meetings.

Resolved, That the General Assembly is a legislative body and is not a judicial body, and ought not to hear and determine any question concerning the election of State officers, except to declare the persons whom they shall find to be legally chosen after an examination of such fair list of the persons and number of votes given for each, together with the returns of the presiding officers, and all other questions shall be heard and determined by the ordinary judicial tribunals in the due, orderly, and customary course of judicial procedure.

In accordance with this view the Senate, after receiving the returns from the House on the opening day, at once examined them, and by a series of resolutions declared the election of the Democratic candidates. When these resolutions were sent to the House on the following day, Jan. 8, that body, instead of taking action thereon, voted that a special investigating committee of 8 members be appointed by the Speaker, with authority to examine carefully the returns, to send for necessary persons and papers, and to sit during any recess of the House. It was then voted that a recess be taken till Jan. 20, a new rule having been first adopted by which the first

legislative day should extend over every such recess and until a resolution of adjournment should be adopted. The Senate continued its sessions through Jan. 13, adjourning on that day till Jan. 20. Before adjournment, on Jan. 13, the Democratic candidates, whom it had by resolution declared elected, appeared before it and took the oath of office administered by one of its members. The officials so qualified then demanded possession of their respective offices from the Republican incumbents, and were refused on the ground that they were not legally entitled thereto. When the House reassembled, on Jan. 20, its investigating committee was not ready to report, but on Jan. 28 a majority and a minority report were submitted. The Republican majority of the committee set forth its findings as follows:

It appears from the face of the returns that there were in the whole State 1,269 general ballots rejected; 459 for being "double," which, since the passage of the so-called secret-ballot law, is no longer, in the opinion of the committee, legal cause for rejection; and 881 for all other causes. Of said 881, 111 general ballots were rejected for the following causes, none of which assignment of causes, in the opinion of the committee, justifies the rejection of a ballot, to wit:

"Illegal," New Britain.....	15
"Illegal," Killingworth.....	8
"For having on the word 'for,' Brooklyn.....	4
"Because of word 'for,' Waterbury.....	43
"Prohibition votes not printed in conformity with the law," Norwalk.....	80
"Not printed according to law," Stratford.....	11
"Not as prescribed by law," Wolcott.....	1
Total.....	111

It further appears that 121 general ballots were rejected, and no cause assigned therefor.

Your committee further find from the face of said returns that in many towns throughout the State the number of votes for State officers counted and returned by the counters and moderators exceeds the number of votes cast in said towns respectively.

When your committee, in pursuance of their duties, proposed to examine evidence explanatory of said returns, which was called for by questions arising on the face of the returns, the Democratic minority refused to sit with the committee, on the ground that neither the committee nor the General Assembly had power to take any extrinsic evidence regarding the returns.

Your committee, in pursuance of their duties, examined the evidence explanatory of said returns, and find that in the Fourth district of the town of Norwich 38 general ballots were returned as counted in excess of the number of general ballots cast in that district, and in excess of the number of names checked as voting in said district.

Your committee further find that 20 of said wrongfully returned general ballots were counted for the Democratic candidates for Governor, Lieutenant-Governor, Treasurer, and Secretary, and 10 of them for the Democratic candidate for Comptroller, by reason of a clerical error in footing the number of votes counted for them respectively. Your committee have been unable to find for whom the remaining 18 votes were counted, or the cause of their being counted.

Your committee further find that 126 Republican general ballots were rejected in the Fifth District of Bridgeport for having an alleged distinguishing mark, and that said distinguishing mark was merely a minute speck made by defective printing, was found on numerous ballots used in other places at said election, and was not a distinguishing mark in the meaning of the law.

Your committee further find that 103 general ballots, which are part of the class of 111 hereinbefore

referred to as rejected, were rejected solely because the word "for" was printed thereon as part of the title of each office voted for, and that therefore the said ballots were illegally rejected.

The committee found a total of 808 ballots rejected for illegal reasons, and 20 ballots illegally counted in Norwich for the Democratic candidates. Assuming all these rejected ballots to be Republican, it found that the only candidate having a majority of all the votes cast was the Democratic candidate for Comptroller.

The report of the Democratic minority of the committee declared all the Democratic candidates to be duly elected.

Prolonged debates upon these reports consumed the time of the House for nearly a week. On Feb. 3, by a strict party vote, the resolutions recommended by the majority of the committee were passed. These resolutions declared the facts found by the majority of the committee to be true, and postponed any further action by the House till the Senate should join with it in an examination of the returns. The Senate replied by a resolution declaring that on the first day of the session it had made all the examination of the returns it could lawfully make and had declared the result, and that it could lawfully take no further action in the premises. The House then passed a resolution proposing a conference committee of five members from each House, which should take into consideration the report of the House investigating committee. The Senate refused to accede to this, but proposed a like committee to take into consideration the separate action of the two Houses regarding the late election. This resolution, after considerable debate and some misunderstanding between the two Houses regarding the use of the word "late" therein, was finally adopted by the House. The committee was appointed on Feb. 10, and on Feb. 12 it reported that no basis of agreement respecting the controversy could be reached. The House then passed a resolution declaring Nicholas Staub to be elected Comptroller, by virtue of which, on Feb. 16, the office was peaceably surrendered to him by Comptroller Wright. By another resolution at the same time the House expressed its willingness to unite with the Senate in the passage of a joint resolution requesting the advice of the judges of the Supreme Court on all questions of law involved in their differences, and pledged itself to abide by their decision. The Senate refused to accept this offer, insisting that there was nothing to be arbitrated or decided. It claimed that Luzon B. Morris and his Democratic associates on the State ticket were the only legal State officials, and it further refused to transact any business of legislation whatever till the House should declare them elected. It also refused to recognize in any manner Gov. Bulkeley and the other hold-over Republican officials. Gov. Bulkeley, on Feb. 17, sent several communications to the Senate, among them the renomination of Judge Loomis of the Supreme Court, but it refused to receive any such communications, and numerous messages sent by him subsequently were likewise refused. In the House several bills were passed, among them the regular appropriation bills, but the Senate rigidly adhered to its purpose of obstruction, and although several other propositions

were offered by the House no prospect of a settlement appeared for several weeks. About March 17 the House passed a bill, known as the Judson bill, which provided that any person voted for at the recent election may bring a petition to a judge of the Superior Court within fifteen days after the passage of the act, and that the decision of this judge shall be subject to appeal to the Supreme Court of Errors. The bill empowers the court to open the ballot-boxes. If the General Assembly is not in session when final judgment is rendered, the person administering the office of Governor is directed to convene the Assembly, which shall correct the election returns in accordance with the finding of the court.

When this bill reached the Senate, several counter-propositions in the form of bills for effecting a settlement were introduced and discussed in that body. Finally, on March 26, all these were referred to a Senate committee of two Republicans and two Democrats, in order that it might agree upon a measure that both parties would support. This committee, on April 1, reported no agreement possible. The Senators then withdrew their several propositions, and the Senate refused to pass the Judson bill. It further resolved

That this body will not further consider any offer looking toward a compromise or settlement, so long as the House maintains its present attitude toward the Constitution, and will not receive or entertain any bill or resolution relating to the State officers, emanating from the House, until the House has performed its constitutional duty.

This action was no sooner taken than the House passed a resolution adjourning till Nov. 11. The Senate then adjourned from week to week, holding only a brief session on each Tuesday, till April 27, when it adjourned to May 14. On that day, after a short session, it adjourned to June 15, from that day to June 29, and from June 29 to Sept. 7, without taking any action on the bills pending before it. As the appropriations made by the preceding General Assembly covered only the two years ending July 1, 1891, the failure of the Senate to act on the appropriation bills passed by the House caused considerable embarrassment to the State and to the public institutions.

When the House adjourned from April 1 to Nov. 11 without having declared the election of any State officers except the Comptroller, the Democrats decided to bring their case into the courts, and on April 14 two writs of *quo warrant* were filed in the Superior Court at New Haven, one brought by Luzon B. Morris against acting-Gov. Bulkeley, and the other by Joseph W. Alsop against acting-Lieut.-Gov. Merwin. These cases involved a decision of the legality of the action of Gov. Bulkeley and Lieut.-Gov. Merwin in retaining possession of their respective offices. On May 8 the defendants filed their answers, and early in June replications were filed by the plaintiffs. Later, in June, Joseph W. Alsop died, and his case was therefore discontinued. No hearing had been held in the other case when the Senate reassembled on Sept. 7. It, therefore, again adjourned to Nov. 10, after listening to eulogies of Dr. Alsop. On Oct. 16, before Judge Thayer of the Superior

Court, the defendant in *Morris v. Bulkeley* filed a demurrer attacking the jurisdiction of the court, and the judge reserved all questions of law involved in the case for the Supreme Court. That tribunal heard arguments on Nov. 23 and 24, and reserved its decision. As the Republicans had hitherto shown anxiety to have the dispute settled by the courts, it was scarcely expected that they would raise the objection to the jurisdiction set out in their demurrer. Earlier in the year Marvin H. Sanger had brought a writ of *quo warranto* against Treasurer Henry, and the case came up for a hearing in the Superior Court on Nov. 10. Judge Thayer continued it to await the decision in *Morris v. Bulkeley*.*

The State Senate reassembled on Nov. 10, and again adjourned to Dec. 7, from which date it adjourned to Jan. 6, 1892. The House assembled on Nov. 11, and adjourned to Jan. 6, 1892.

One of the few duties of the General Assembly, the performance of which was not prevented by the dispute between the two Houses, was the election of a United States Senator. The Republican caucus early in January unanimously renominated Senator O. H. Platt, and at a joint session of the General Assembly on Jan. 21 he was re-elected by a vote of 141 to 134 for Carlos French, the Democratic nominee.

Legal Complications.—Early in his term the Democratic State Comptroller refused to draw an order for the monthly salary of the Governor's private secretary, on the ground that, as Gov. Bulkeley was illegally holding his office, any person appointed by him as private secretary should not be recognized as a legal State official. Secretary Austin Brainard thereupon brought a writ of mandamus late in March against Comptroller Staub, in the Superior Court, to compel him to issue the order. The defendant filed an answer on April 7, alleging, among other things, that Gov. Bulkeley had no title to the office held by him. On motion to strike out this part of the answer, Judge Hall, late in June, ruled that the validity of the Governor's title was a collateral question, which could not be passed upon in the present case. On a trial of the case on its merits before Judge Robinson of the same court, a decision was rendered about Nov. 15 to the effect that, as the plaintiff was *de facto* private secretary of a *de facto* Governor, it was the duty of the Comptroller, as a purely ministerial officer, to draw his order in payment of the salary, regardless of the title under which the plaintiff held. An appeal was taken to the State Supreme Court. For the reason alleged in this case the Comptroller also refused to draw orders for the salaries of Treasurer Henry and other hold-over officials and appointees of Gov. Bulkeley.

On July 1 the period expired for which the appropriations were made by the General Assembly of 1889. Comptroller Staub at once sought the advice of counsel respecting his authority to draw orders when no appropriation

existed for their payment, and was instructed that in such case he might legally draw orders for all expenses necessary to maintain the essential operations of the State government, those operations being essential which the General Assembly had by law commanded to be performed, as distinguished from those which it had merely authorized or permitted. Treasurer Henry at first refused to pay any orders except those drawn against the unexpended balances of former appropriations, but informed the holders of State orders that the Aetna Life Insurance Company would cash them at their full value upon presentation at its office, the company trusting to future legislation for reimbursement. Early in August, however, the Treasurer obtained legal advice that he might pay orders issued for all services authorized by the Constitution or by any act of the General Assembly, in the same manner as if a special appropriation had been made therefor, and that the distinction made by the advisers of Comptroller Staub between acts which the General Assembly had commanded and those which it had authorized should not be observed. Under this opinion, the Treasurer was justified in paying nearly every order presented. But the Comptroller, under the advice of his counsel, refused to draw orders for any objects not strictly essential to the maintenance of the government. Among others, he refused to issue orders for the expenses of the encampment of the National Guard at Niantic, and Paymaster Fenn brought a writ of mandamus to compel the issue of such orders. The case had not been tried at the end of the year.

Under the State law the Comptroller and the Treasurer are required to meet as a Board of Equalization to examine and correct the returns of insurance companies as to the value of their capital stock, etc. When the time for meeting came in October, Comptroller Staub, who had never officially recognized Treasurer Henry, invited the Democratic claimant, Marvin H. Sanger, to meet with him and examine the returns. Treasurer Henry did not assert his right to act as one of the board, but declined to accept the value placed by Messrs. Staub and Sanger upon the insurance stock, or to recognize any of their acts as legal. He announced his willingness to receive checks from the insurance companies to the amount of the value placed by the latter upon their stock, and to credit them on account, but would not accept such checks in full payment for taxes.

Late in February Gov. Bulkeley issued a requisition upon Gov. David B. Hill, of New York, for the return of one Fardon, who was charged with the crime of burglary. When the papers were presented to Gov. Hill, on Feb. 24, he refused to honor them, on the ground that he could not recognize Gov. Bulkeley as the legal Governor of Connecticut, believing that he was a usurper, and that Judge Morris was entitled to the office. On March 5 he refused another requisition from Gov. Bulkeley for the return of one Colbert, charged with horse stealing.

Decision.—In the suit of *Fields vs. Osborne* the State Supreme Court, early in June, rendered a decision that indirectly settled some of the disputed questions involved in the contest over State officers. The suit turned upon the validity

* The State Supreme Court did not render its decision in *Morris v. Bulkeley* till Jan. 5, 1892. It then found Morgan G. Bulkeley to be Governor, both *de facto* and *de jure*. His right to hold over till both houses of the General Assembly should unite in declaring the election of his successor was affirmed. The questions in dispute between the two houses regarding the right of the General Assembly to go behind the returns were not considered.

ty of certain ballots which contained the word "for" before the name of each office to be filled, and which also contained, in some cases, the words "For Judge of Probate, Henry H. Steadman," and in other cases the words "and *ex officio* Registrar of Births, Marriages, and Deaths," printed after the words "Town Clerk." The court held that, as no office of judge of probate was to be filled at the election in which these ballots were used, and as the statutes provide for the election of a town clerk, and not for any officer called town clerk and *ex officio* registrar, etc., the addition of the above-quoted phrases vitiated the ballots under the provisions of the ballot law of 1889. This ruling was decisive of the case; but the court went further and intimated its opinion that the word "for" printed before the name of each office was not such an addition to the ballots as to render them void, unless it should be added for a fraudulent purpose in order to identify them. As the local election officers in many cases at the election of November, 1890, had rejected so-called "for" ballots as illegal, this decision seemed to sustain the contention of the Republicans as to the illegality of such action. The case arose out of a local election in the town of Branford.

Education.—The following statistics from the latest report of the State Board of Education cover the school year 1889-'90: Children of school age in the State, 159,241; number enrolled in the public schools, 126,505; enrolled in other schools, 19,066; not enrolled in any school, 23,562; average daily attendance in the public schools in winter, 86,275; in summer, 81,038; number of male teachers in the public schools in winter, 460; in summer, 356; female teachers, in winter, 2,766; in summer, 2,852; average monthly wages, male teachers, \$76.24; average monthly wages, female teachers, \$39.34. The total receipts for school purposes during the year amounted to \$2,015,667, of which the sum of \$119,430 was derived from the income of the school fund, \$238,861 from the State tax for schools, \$953,890 from town-school taxes, and \$580,010 from district-school taxes. On June 30, 1890, the principal of the State-school fund was \$2,020,073.

The Normal School buildings at New Britain have been enlarged, and the buildings for the new school at Willimantic are under way.

During the school year 1889-'90 372 pupils were enrolled at New Britain and 70 at Willimantic.

Savings Banks.—On Oct. 1, 1890, there were 86 savings banks in the State, having assets and liabilities amounting to \$123,432,832.24. The deposits therein amounted to \$116,406,675.39, and they had accumulated a surplus of \$4,177,383.50. Since Oct. 1, 1889, the increase of deposits had been \$6,035,713.09, and of surplus \$375,856.32. There were 305,863 depositors, an increase of 10,967 in one year. Eight State banks, eight trust companies, and ten investment companies also do business in the State.

Tobacco.—The number of planters in the State during the census year 1890 was 2,815; the area devoted to tobacco, 6,331 acres; the product, 8,874,924 pounds; and the value of the crop to the producer, estimated on a basis of actual sales, \$1,132,111.

Manufactures.—The following summary of the business of 636 manufacturing establishments in the State is reported by the State Labor Commissioner: Value of goods manufactured, \$125,723,066.51; value of stock and materials, \$67,228,873.72; cost of manufacture (less rent, interest, and taxes), \$45,541,069.81; rent, interest, and taxes, \$2,392,008.90; net profits, \$10,561,114.08. The capital employed was \$117,361,435.13; the amount paid for labor, \$32,720,018.18; and the number of hands employed, 75,191. The amount paid for wages was 28.41 of the cost of goods manufactured; and the value of stock and material 58.37 per cent.

Local Option.—At the town elections held throughout the State early in October, 83 towns voted for license under the local-option law and 85 against license. There were few changes from the results of the preceding October election.

COREA, called by the natives Ta Chō-sūn (Great or All Chō-sūn), an independent kingdom in Asia, between China, the Yellow Sea, and the Sea of Japan. The name means Morning Radiance. From the Russian province of Primorskaja it is separated by the Tumen, and from the Chinese province of Shing-King by the Yalu river. It thus closely adjoins the three powerful nations—China, Russia, and Japan (see map in "Annual Cyclopædia" for 1885, page 264). Long supposed to be a peninsula, though by first European travelers of the seventeenth century asserted to be an island, Corea has a complete water boundary. On the northern frontier, in north latitude 42° and longitude 127° 42', rises the main peak of the ever-white mountains, named Paik-Tu, or White Head, in the crater of which lies the Dragon's lake. Out of this flow the two rivers that divide Corea from Russia and China, making the country an island. In descending the Yalu river on the west a striking difference is noted in flora, fauna, and man. The Chinese, dressed in blue, plow their fields, using horses, on lands from which deciduous trees have been mostly cleared away. The Coreans, dressed in white, use oxen as beasts of draught and burden, and the trees are mostly evergreen. The area of Corea is estimated at 82,000 square miles and its sea-coast line at 1,740 miles. The most careful estimates, based on Government reports, give Corea a population of 12,000,000.

History.—The present race of people in Corea is a composite formed of many tribes and emigrants from the north and west. Tradition shows the movement of large bodies of men from Manchuria into this river-made island, but tradition and written history gather around the name of Ki Ja (or Ki-shi) as the civilizer of the country. Leaving China on the fall of the Chow dynasty, 1122 B. C., Ki Ja entered the present northeastern province of Ping-an with 5,000 followers. He reduced the various tribes to order, began the capital city that still bears the name of Ping-an, promulgated laws, divided the country into administrative districts, and introduced Chinese writing, literature, art, medicine, and measures. Intending to reflect the glories of China, his model, he named the country Chō-sūn, or Morning Radiance. His successors reigned until about 221 B. C., from which time until 9 A. D. Corea was in disorder or annexed to China. The era of the

three kingdoms lasted from A. D. 9 to 960, during which period border conflicts, feudalism, Buddhism, wars with China and Japan, and trade with the Arabs were the chief features of history. In 960 A. D. Wu Wang extinguished the rival states and gave political unity to the country under the name Koria (whence our Corea), and fixing his capital at Sunto, north of Seoul, a splendid city now largely in ruins. The Mongol invasion and the first recorded use of the mariner's compass, used in navigating a Chinese fleet to Corea, A. D. 1122, occurred during this period. In 1392, on the fall of the Mongols, Tai Jo became paramount, fixed his *seoul*, or capital, on Han river, and founded the present dynasty and methods of political administration. Han-yang the capital, is in the province of Kiung-kai, and is known to Europeans as Seoul, or Sŭul. The invasions of the Japanese in 1592-'97 and the Manchus in 1627, the long isolation of the country from any but Chinese influences, the introduction of Christianity, and the modern opening of the country by treaties with foreign nations are the chief events in modern Chō-sŭn. The present Hap-mun, or King, is the twenty-eighth sovereign of his line, and his name, like most Korean words when Romanized, has a different spelling and pronunciation, according as it is expressed in Korean, Chinese, or Japanese. This trilingual presentation of Korean vocables explains the apparent confusion in geographical and other nomenclature.

Government.—The Government is an absolute monarchy of the patriarchal type, greatly modified by surviving and powerful features of feudalism. The nobles, by means of their family influence, hereditary privileges, and numerous retainers, possess great power and compel the policy of the Government. The King governs with three councilors, forming a triple premiership, aided by the six departments of the executive—viz., revenue, rites, war, justice, public works, and ceremonies. With the six generals who command respectively the left, right, front, middle, rear, and special guards or barracks, so called, resides the balance of power; for under these are the military governors of the eight provinces, and, in effect, so also are the civil functionaries. In this way the authority of the King is hampered and often completely negatived. These eight provinces take their names from the union of the first half of the names of the two principal cities in each.

Classes and Domestic Politics.—The general division of the people is into the *yang-ban*, men of high, and *song-nom*, men of low rank—that is, the scholar class and the common people. As in China and old Japan, "the four classes" consist of the literary, agricultural, artisan, and trading. Yet there is no fixed birth caste, and the higher classes are being continually recruited from the lower, wealth being usually the factor that decides social position, at least locally. In general, it may be said that in the north Chinese ideas and customs prevail, while in the south the influence of the Japanese language and civilization is strikingly manifest. China claims the right of interference with Corea's foreign policy, which an increasing sentiment resents. The varying adherence of rival parties to the ideas of Chinese or of Japanese

civilization respectively, forms what may be called the national politics of Corea. Local politics are conditioned by the constant avarice and rapacity of the magistrates with their hordes of paid dependents and the countervailing struggles of the guilds of the working classes and the jealousy of the nobles and their followers.

Climate, Soil, and Crops.—The eight provinces are formed by natural features, and are, in general, river basins bounded by mountains. In the north the winters are long and the cold severe. Here also is the haunt of the tiger. In the southern half fertile plains abound, and the amount of arable land and the area of plantation on the almost innumerable islands are large. The climate is bracing, except during the rainy season, which is from June to September. The autumn is nearly cloudless, and the winter means usually a stretch of clear weather, except during the plentiful snow. Many of the rivers are frozen over during four months of the year. It is admirably adapted to agriculture. Hitherto, owing to the wretched system of government, by which the people are systematically plundered by the magistrates and their minions, little incentive to cultivate the soil to the fullest extent has existed. Besides, there was no foreign outlet for surplus produce, even were the means of transportation adequate to move the crop products beyond the region of growth. The cost of transportation across the country at its narrowest width is about 8 per cent. of the value of the goods. Now, the demand from foreign ports, the better prices obtainable, and the improvement in water transportation have greatly stimulated the farmers to increased efforts, and the acreage of cultivation is larger than ever. On land, bulls and ponies are still the sole means of transport. The ports of Chemulpo, near the capital, and Fusan and Wensan are open by treaty; but occasional visits to other ports are cautiously allowed to foreign vessels.

Foreign Trade.—The foreign trade for the year 1890 increased beyond all expectations, the total value being more than double that of 1889:

MOVEMENT.	1889.	1890.
Exports.....	\$1,886,580	\$5,568,820
Imports.....	8,016,645	5,210,445

Corean beans make the best *soy* and *miso*, articles used in Japan, and the former is exported to Europe as the basis of several condiments. In 1889, 26,455 tons were exported, and in 1890, 41,209 tons. In the same years the export of rice was 2,031 and 54,711 tons, respectively. This increase of rice export promises to be permanent, and much Japanese capital has been invested in rice husking and cleaning mills at Fusan and Chemulpo, the white rice finding its way to Europe. Dried fish is exported, the amount in 1890 reaching 2,200 tons. At present the Japanese get the largest share of the trade, and nearly monopolize the fisheries. In 1890 716 fishing boats, employing 3,500 men, were registered, the average annual net earnings of each boat being \$600. They also have 22 boats, employing 256 men, for capturing whales, and the 17 caught in 1890 netted \$10,000. As the Corean national dress is white cotton, handsomely and glossily

starched in summer, and heavily padded in winter, there is little demand for woollens; but cotton goods, mostly from Manchester, England, find a steady sale. In 1890 shirtings to the value of \$1,474,745 and lawns and muslins worth \$390,020 were imported, against the figures \$903,100 and \$189,070 for the same articles in 1889. Thus far, the natives seem to prefer the British textiles, even with their heavy loading of size. These they wash and bleach, sizing them heavily again with starch in order to give them that peculiar luster which the Korean women so skillfully impart. In their commercial dealings the people are almost bigotedly conservative. Once becoming accustomed to a particular brand, trade mark, or style of goods, they can not easily be induced to change it, even for a manifestly better article. Most of the yarn imported comes from Bombay. Three fourths of the silk imported—to the amount of \$129,360 in 1889 and \$225,805 in 1890—comes from China. American drills and sheetings are not in much demand. About \$222,000 worth of zinc and tin and \$245,000 worth of copper were imported, chiefly for the minting of cash; but the people much prefer the old to the new money. The conservative instinct is shown also in the steady use of American petroleum, notwithstanding the Russian efforts to introduce a cheaper article; while against all competitors, German quinine, first in the field, obstinately holds its own. Telegraph materials figure in the list of imports, for the building of a line of wire between Seoul and Gensan. There are telegraph lines between Fusan and Seoul, and from Seoul to Peking. Notwithstanding the excellence and cheapness of the native tobacco, and its strong fiber, fitting it for wrappers, American cigarettes were imported to the amount of \$9,575. Foreign manufactures amounted in all to \$3,951,305. Trade across the Russian frontier has also been steadily maintained, amounting in the aggregate to \$78,860. In the treaty ports the number of foreign settlers has increased. The Chinese at Chemulpo have obtained a new concession of land for settlement, and the Japanese have made a similar application for more room. The total number of ships entering the three open ports in 1889 was: Of sailing ships, 975, aggregating 29,485 tons burden; steamers, 249, aggregating 74,352 tons. In 1890, 2,939 sailing vessels of 37,457 tons, and 1,958 steamers of 276,390 tons. In this work of transport the following flags were represented:

NATIONALITY.	Vessels.	Tonnage.
Corean.....	83	6,508
Japanese.....	1,436	294,001
Chinese.....	59	7,992
German.....	81	12,298
Norwegian.....	7	8,108
Total.....	1,621	312,847

The chief articles of export are beans, rice, hides, bones, grain, cattle, fish, and silk. The imports include textiles, metals, kerosene, machinery, manufactured tobacco, matches, arms, and ammunition. The development of trade since 1885 is shown herewith: In 1885, \$1,912,430; 1886, \$1,486,590; 1887, \$3,017,030; 1888, \$3,098,175; 1889, \$3,458,740; 1890, \$6,910,035.

No account is here taken of the export of ginseng, which is a Government monopoly, and one of the chief sources of revenue, netting the Government annually over \$500,000.

Religion.—The Koreans were formerly Buddhists, this form of faith having been introduced from Tibet and China, A. D. 352. It spread over the country, and reached its height of power in the fourteenth century, the nation being then priest-ridden, the country filled with monasteries, and the court favorites and most influential men about the King being Buddhist monks. To this period belong not only the colossal sculptures, twin images or granite monoliths, cut out of the solid rock or mountain spurs and at a distance resembling light-houses, called *miryok* (stone men), but also the solid stone pagodas, of which a few still remain. It is said that the substitution, by a priest named Shi Ton, of an illegitimate son for the king's heir precipitated the fall of the ruling dynasty and forever abolished the power of the Buddhist priests. The founder of the present royal house forbade forever the entrance of a Buddhist priest or monk within the walls of the royal capital. Hence there is no Buddhist temple in Seoul, and in the other cities Buddhism is in exceedingly low estate. The monks are still allowed to occupy the monasteries, but in reality they act as a clerical militia, and the monastic buildings, often fortified and in strategic positions, form part of the military system of defense under the control of the King's generals. Unlearned, often illiterate, and under a social and political ban, most of the monks have degenerated into mountebanks and beggars. The majority of the people follow the Confucian ethics; but superstition is rife, and the worship of local deities or patrons in the form of heroes, or even of sacred beasts, is common. Shamanism is prevalent, and the number of mythical animals believed in is large. Geomancers, necromancers, and fortune-tellers abound.

Christianity was introduced in 1777 by Korean students who accompanied the annual embassy to Peking, and obtained books from the Jesuit missionaries there. Companies of Christian believers were formed, and in 1836 the first French priest, in disguise, "violated the frontier," and was soon followed by others, despite the martyrdom of several, which was followed by the menace of French ships of war. In 1866 4 bishops and 18 priests had secretly entered, and the Roman Catholics claimed a following of 60,000 converts. Dreadful persecutions, culminating in 1866, when 9 French priests were publicly beheaded, have crimsoned the Christian martyr roll of Corea with probably 10,000 names. There are now 50,000 Roman Catholics in Corea, and the strong force of missionaries who minister to them are all from the Société des Missions Étrangères, of Paris. Protestant Christianity is represented (1891) by 21 missionaries, most of whom have recently arrived. This work began in 1884. In the Presbyterian church 107 persons, in 1890, had been baptized, and in the Methodist, 50. The various evangelistic agencies are prosecuted, and the hospital, printing-press, and school are made use of, and tracts, books, and Scriptures are circulated. In the tours made by the missionaries the country has been widely explored. The Protestant missions are English, American,

Canadian, and Australian, and in denomination Presbyterian, Methodist, and Episcopalian. Steps have been taken for the translation of a standard version of the Bible, the first efforts in this direction having been made by the Rev. John Ross, of Mukden, China, ten years ago.

Medical Science.—Corean medical literature enjoys a good reputation in China. Several standard works in the art of therapeutics have long been known in Japan also. Nevertheless, the treatment of their own sick is rude and barbarous from the standpoint of Western science. The poor and the infected are cast out from their homes, and left with food and water in rude huts of straw on the waste lands beyond the city gates. The Government, appreciating the value of the medical skill displayed by an American physician, H. N. Allen, after the *coup d'état* and the battle between the Chinese and the Japanese in 1884, has established the Royal Corean Hospital in Seoul. Served by American physicians on modern principles and methods, 11,000 cases were treated in this hospital in 1889. The Methodist hospital treated 8,000 cases in the same year. There is also a Japanese hospital at Fusan.

Education and Literature.—The basis of education is the Chinese literature. Appointments to the Government service are through the literary examinations held at stated intervals in the provincial and national capitals. At Seoul, in the Royal Corean Government College, Western languages and science are taught, the three chief instructors being Americans, graduates of colleges in the United States. Several young men, graduated at this institution, are now employed in Government service. Education for the people is entirely a matter of private enterprise. Libraries and book-shops are found in the large cities, but there is little true vernacular literature, the books containing serious information being in Chinese. There is a genuine native alphabet, consisting of 25 letters, 11 vowels and 14 consonants, and classified according to the organs of speech. It is phonetic, and is one of the simplest and most perfect in the world. This Un-mun alphabet was invented in the fourteenth century, at about the same time that movable metal types were used for printing, wooden types having been known since 1320, and authentic printed Corean books bearing the date 1317-'24 A. D. being extant. The apparatus for the study of Corean by Europeans now consists of a large dictionary and a grammar by the French missionaries, a grammar and dictionary in English by the Rev. H. G. Underwood, a dictionary by H. Scott, and phrase books and critical articles by W. G. Aston, John Ross, and others.

COSTA RICA, a republic in Central America. The executive authority is concentrated in the hands of a President, who is elected for four years, and the legislative power is vested in a single chamber, called the House of Representatives, composed of 26 members, elected indirectly for four years, one half retiring each second year. José Joaquín Rodríguez was elected President on May 8, 1890.

Area and Population.—The republic is estimated to have an area of 20,000 square miles, and its population in 1889 was estimated at 209,644. In that year there were 9,151 births, 5,238 deaths, 6,330 arrivals, and 3,706 departures.

Finance.—The revenue for 1889-'90 was \$5,078,166, and the expenditure \$5,924,915. The chief items of expenditure were \$2,046,647 for the debt, \$549,112 for war, \$980,517 for public works, and \$449,877 for education. The foreign debt, contracted in England at 6 and 7 per cent. interest in 1871 and 1882, amounted to £2,691,300, and the interest in default to £2,691,300 in 1887, when the whole was converted into a loan of £2,000,000 paying 5 per cent. interest. The debt was disputed by the Costa Rican Government, which expended \$500,000 in an unsuccessful suit against the London bankers, because of the total nominal sum of \$26,218,425 only \$4,877,865 had reached the treasury. The converted debt is guaranteed on the customs revenue, and since 1888 the interest has been regularly paid. All the debts outstanding in 1890 amounted to \$17,712,338 in silver. A land and loan company with a capital of \$5,000,000 has been granted important concessions for the sake of promoting agriculture and immigration.

Commerce and Production.—The chief commercial products are coffee and bananas. Out of a total exportation valued in 1889 at \$6,965,371, coffee stood for \$6,186,656, and bananas for \$569,020. About three fifths of the coffee went to England and the remainder and all the bananas to the United States. Other exports are hides, skins, cocoa-nuts, cacao, mother-of-pearl, cedar wood, and gold. Rice, corn, wheat, and potatoes are cultivated in addition to tropical products. The total value of the imports in 1889 was \$6,306,408.

The shipping entered at Costa Rican ports in 1889 consisted of 309 vessels, of 367,052 tons.

Communications.—There were 180 miles of railroad completed before the beginning of 1890, to which 51 miles have been added, uniting Port Limon with San José, the capital.

The telegraphs in 1889 had a total length of 600 miles. The number of dispatches in 1888 was 112,639.

Public Affairs.—Since the last Central American war, Costa Rica has made peaceful progress in developing her great agricultural resources and building railroads with the aid of American capital and in improving the sanitation of the towns and advancing education. A plot against the Government was suspected or discovered in April, 1891, and several persons were arrested, but no disturbance of the peace occurred.

Reciprocity.—A treaty of commercial reciprocity between Costa Rica and the United States was negotiated in 1885, which was never ratified by the two governments. Under it, sugar, coffee, cacao, pea-nuts, ginger, bananas, potatoes; *pita* or hat straw, gums, dye woods, rubber, hides, timber, and other Costa Rican products were to be admitted free into the United States, and cattle, salt, petroleum, coal, preserved meat, bricks, lime, mining and agricultural machinery, and cotton from the United States into Costa Rica. In 1891 negotiations were reopened for a treaty containing the same provisions. The Costa Rican Government was bound not to impair the security of the foreign debt, for which the customs receipts are pledged, and therefore sought to make an arrangement with the English bondholders to release this lien and free its hands.

CRISP, CHARLES FREDERICK, an American statesman, thirty-second Speaker of the United States House of Representatives, born in



CHARLES FREDERICK CRISP.

Sheffield, England, Jan. 29, 1845. His parents were actors, and were on a professional visit to England at the time of the son's birth. The father, William H. Crisp, a native of England, was a naturalized citizen of the United States. An older son and two daughters adopted the players' profession, but all are now dead. Charles was brought back to the United States while still an infant, and was educated in the schools of Savannah and Macon. In May, 1864, he enlisted in the Tenth Virginia infantry (Confederate), with which he served for three years, becoming a lieutenant, when in May, 1864, he was made a prisoner of war and was sent to Fort Delaware. Here he remained in confinement until June, 1865, when, the war being over, he was released. His parents being in Ellaville, he went thither, and soon afterward began the study of law in Americus. He was admitted to the bar in 1866, and began practice in Ellaville, removing in 1873 to Americus, which is still his home. In 1872 he was appointed Solicitor-general of the Southwestern Judicial District of Georgia, and the next year he was reappointed for a term of four years. In June, 1877, he was appointed judge of the Supreme Court of Georgia for the Southwestern Circuit, and in 1878 the Legislature elected him to that office. In 1880 he was re-elected for four years, but two years later he resigned the judgeship and accepted a nomination for member of Congress from the Third District of Georgia. He has served continuously in that

body ever since. In 1883 he presided over the Georgia Democratic State Convention. In the House of Representatives he has been known as a faithful attendant, seldom absent from his seat, and a hard worker and ready debater. He was chairman of the Committee of Elections in the Fiftieth Congress, and has served on those on Commerce, Manufactures, and the Pacific Railroads. The large Democratic majority in the House of Representatives of the Fifty-second Congress threw the contest for the Speakership into the Democratic caucus. The foremost aspirants were Roger Q. Mills, of Texas, and Mr. Crisp. Mr. Mills was the candidate of those who favored the nomination of Grover Cleveland for the presidency in 1892 and a radical reduction of the tariff. Mr. Crisp is understood to be a free-trader in theory, but practically more conservative than Mr. Mills. He is also understood to favor the free coinage of silver. Other aspirants for the nomination were Messrs. Springer, of Illinois, McMillin, of Tennessee, and Hatch, of Missouri. There was a long contest, and thirty ballots were necessary before a nomination was made. It was pointed out that Mr. Crisp's support came principally from those States that invariably give Democratic majorities; that those States which favored his nomination cast 120 Democratic votes in the electoral college, while those that favored Mr. Mills cast but 38. The adherents of Mr. Mills based their argument on the desirability of gaining victories in

States heretofore Republican. The following table is a record of the ballots:

BALLOTS.	Crisp.	Mills.	Springer.	McMillin.	Hatch.	Stevens.
First.....	84	78	82	18	14	1
Second.....	89	80	28	18	11	1
Third.....	91	82	24	18	11	1
Fourth.....	98	87	20	18	8	1
Fifth.....	95	89	20	18	4	1
Sixth.....	95	89	20	18	4	1
Seventh.....	94	91	18	18	5	1
Eighth.....	94	91	17	19	5	1
Ninth.....	95	91	16	19	5	1
Tenth.....	94	90	17	19	5	1
Eleventh.....	93	89	16	20	5	1
Twelfth.....	92	89	19	19	5	1
Thirteenth.....	94	91	16	20	5	1
Fourteenth.....	93	89	17	19	5	1
Fifteenth.....	92	89	19	17	5	1
Sixteenth.....	94	91	17	19	5	1
Seventeenth.....	94	91	19	17	5	1
Eighteenth.....	94	90	17	19	5	1
Nineteenth.....	94	91	17	19	5	1
Twentieth.....	92	90	17	17	5	1
Twenty-first.....	94	91	17	19	5	1
Twenty-second.....	95	93	17	19	4	1
Twenty-third.....	100	95	13	19	*	1
Twenty-fourth.....	101	95	12	19	..	1
Twenty-fifth.....	101	95	12	19	..	1
Twenty-sixth.....	101	95	12	19	..	1
Twenty-seventh.....	101	95	12	19	..	1
Twenty-eighth.....	103	96	8	19	..	1
Twenty-ninth.....	104	94	8	18	..	1
Thirtieth.....	119	105	4	..	..	1

* Hatch withdrew and voted for Crisp.

On motion of Mr. Brown, of Indiana, the nomination was made unanimous. Mr. Crisp, being notified and called for, addressed the caucus as follows:

REPRESENTATIVES: I am profoundly grateful for this mark of your confidence and esteem. I pledge myself here and now to devote whatever of industry and ability I possess to the advancement of the real interests of the Democratic party. I beg to say to you now, as I speak to you my first words since I am your selection for Speaker, that my election means no step backward in tariff reform. I beg to say to you that there is in our party to-day no man who more earnestly believes in the Democratic doctrine of tariff reform than I do. After the long struggle through which we have passed, when Representatives are fatigued, when other officers are to be nominated, it does not become me to consume your time. I beg to say, however, that during the progress of this canvass, I have said no word respecting any individual which would at all justify him in having any harsh feeling of any kind against me. I have felt that it was a friendly struggle. I have felt that we were all Democrats, and I have felt that whoever might be chosen Speaker, whenever this House meets and organizes we start as one body, working and laboring for a common cause—the principles of the Democratic party. I thank you again for your confidence and for your kindness, and assure you that this whole contest has left in my bosom no unkind feeling toward any member of the House.

On Tuesday, Dec. 8, Mr. Crisp was duly elected Speaker of the House of Representatives. The Republican minority cast their votes for ex-Speaker Thomas B. Reed.

CUBA AND PUERTO RICO, two islands which constitute the Spanish possessions in the West Indies. The area of Cuba is 36,013 square miles, inclusive of that of the Isle of Pinos and other islands and keys. The population on Dec. 31, 1890, was officially estimated at 1,631,687 persons, of whom 65 per cent. are white. Havana, the capital, has 250,000 inhabitants. The colony is administered by a governor-general, who is responsible to the Minister of the Colonies in Madrid, but has power in certain cases to suspend the action of any law or decree of the home authorities. Over each of the six provinces is a civil governor, who acts under the direction of the Governor-General. The island is represented in the Spanish Cortes by 2 Senators from each province and by 30 Deputies.

Finances.—The revenue for the fiscal year 1890-'91 was estimated at 25,815,376 pesos, and the expenditure at 25,446,807 pesos. Of the revenue, 14,791,300 pesos were the estimated receipts from customs. The debt called for an expenditure of 10,447,267 pesos, the Ministry of War for 6,229,427 pesos, and the Ministry of the Interior for 4,237,862 pesos. The capital of the debt is stated at \$181,000,000, and the customs revenue is pledged to pay the interest. Besides the general taxation, amounting to over \$25,000,000 a year, the 153 municipalities levy \$8,000,000 a year. The total annual income of the people is estimated at \$80,000,000. To complete the railway system, which now has a length of about 1,000 miles, a loan of \$40,000,000 has been authorized. The Government owns 2,810 miles of telegraphs.

The Army and Navy.—The armed force maintained by the Spanish Government in Cuba is 26,340 men, besides which there is an organiza-

tion of volunteers numbering 63,115. In Puerto Rico 3,566 troops are stationed. A fleet of 68 gunboats cruises about the shores of both islands.

Commerce.—Sugar and tobacco are the staple products of Cuba. The yield of sugar in 1888 was 656,719 tons, and of molasses 157,791 tons. The annual production of tobacco is 300,000 bales. In 1888 there were 182,636 bales exported from Havana, besides 220,000,000 cigars. The forests contain valuable woods, and the mineral wealth of the country is very great, consisting of gold, copper, iron, manganese, an abundance of asphalt, and beautiful marbles. The whole island is exceedingly fertile, yet only one tenth of the surface is cultivated. All tropical fruits and some that are natives of the temperate zone can be easily raised. The commerce is chiefly with Spain, the United States, and Great Britain. The principal imports are flour, salted provisions, lard, textile manufactures, hardware, glass and crockery, and machinery. The United States in 1889 imported from Cuba 1,000,000,000 pounds of sugar, valued at \$36,277,489, molasses of the value of \$3,416,754, tobacco and cigars for \$9,237,836, and fruits and nuts for \$1,576,751. The principal exports from this country to Cuba were meat and dairy products of the value of \$3,257,883, iron and steel manufactures of the value of \$1,988,018, breadstuffs of the value of \$1,336,047, wood and its manufactures of the value of \$1,110,946, and coal of the value of \$581,095.

Puerto Rico.—Puerto Rico, or Porto Rico, is the fourth largest island of the Antilles, and is said to be the most healthful and fertile. The area is 3,550 square miles. The population numbers 784,709 persons, of whom about 300,000 are negroes. The Captain-General, who administers the Government—Luis Daban in 1891—is assisted by a council of military officers nominated by the Crown. The estimated revenue for the year 1888-'89 was 3,863,100 pesos, and the estimated expenditure 3,973,491 pesos. There are 470 miles of railroad and a telegraph system uniting the principal towns.

The principal products are sugar, coffee, tobacco, cotton, rice, cattle, and tropical fruits, especially plantains and bananas. There are salt basins that are exploited by the Government. Valuable cabinet woods and timber are obtained in the forests. The foreign commerce in 1889 consisted of \$14,177,557 of imports and \$11,066,683 of exports. There was an increase of \$1,095,560 over the exports of 1888, owing to larger crops of sugar and tobacco, higher prices for coffee, and an increased exportation of cattle to the neighboring West India islands. Of 63,610 tons of sugar exported 38,724 tons went to the United States, and of 20,703 tons of molasses the United States took 17,949 tons. The exportation of this article was less than in the previous year, because more was used for making rum. Of the total imports, \$3,920,147 came from Spain, \$3,778,015 from the United States, \$3,109,433 from England, \$1,477,321 from Germany, \$945,033 from Cuba, and the rest from France, Denmark, Uruguay, the Argentine Republic, Belgium, and other countries. The importation of flour from the United States was \$1,610,033; of lard, \$451,581; of pork and hams, \$214,392. These figures represent the bulk of the imports of those arti-

cles. Of other provisions imported the United States furnished 35 per cent.; of metals, 13 per cent.; of glassware and porcelain, 15 per cent.; of lumber, 60 per cent.; of hoops and staves, 93 per cent.; of coal, 70 per cent.

Reciprocity Treaty with Spain.—In January, 1891, Secretary Blaine opened a correspondence with the Spanish Government in which he proposed a new treaty of commerce in which the reciprocity provisions of the new American tariff law would be applied to the products of Cuba and Puerto Rico, in return for compensating advantages to American trade. During the negotiations Señor Canovas asked for a reduction or complete remission of the heavy tobacco duties of the McKinley tariff, in regard to which the United States Government could make no arrangement, because new legislation would be required. Minister John W. Foster stood out for the abolition of the duties on flour that were raised in 1889 for the protection of Castilian wheat growers and millers, and although he was unable to secure the free admission of flour, he obtained such a reduction of the duty as will permit the United States to recover and increase the lost trade in cereals. The Spanish Government was constrained to make concessions prejudicial to Spanish producers, and to sacrifice about \$6,000,000 of revenue by the pressure brought to bear by the people of Cuba and Puerto Rico, who have been driven to the verge of rebellion by protective duties and other onerous burdens, and who deputed a commission of notables to press their demands for reciprocity with the United States, in order to escape the injury that would result from discriminating duties against their sugar and coffee and free themselves from the monopoly prices that they have paid for Spanish flour and other manufactures. The most-favored-nation clauses in commercial treaties with Great Britain, Belgium, and other countries necessitated the new Spanish treaty into two parts, one of which will not go into effect till after those treaties expire on June 30, 1892. The treaty was signed at Madrid on June 26, 1891. The United States agrees to admit sugar, molasses, coffee, and hides, the produce of the Spanish West Indian colonies, free of duty. Under the first or transitory schedule, which entered into operation on Sept. 1, 1891, the following articles of American produce or manufacture are admitted free into Cuba and Puerto Rico: Salted, smoked, or canned

meats, bacon and hams, lard, and tallow; preserved and fresh fish and shell fish; oats, barley, rye, buckwheat, and flour from these cereals, and starch and alimentary products of maize, except corn meal; cotton-seed oil and oil cake; hay, straw, and bran; fruits, fresh, dried, and preserved, except raisins, and vegetables and other garden products; tar, pitch, and turpentine; lumber, timber, and cooperage materials, boxes, and doors, frames, and sashes; wagons and carts; sewing machines; crude petroleum; coal; and ice. Corn and corn meal are admitted at a tariff of 25 cents per 100 kilogrammes, wheat at 30 cents, and wheat flour at \$1, and the duties on butter and cheese, on refined petroleum, and on boots and shoes are reduced 25 per cent. As a definitive arrangement, going into force on July 1, 1892, earthy matters and stone, mineral waters, ice, coal, crude petroleum, resins and turpentine, bricks and tiles, pig iron, and iron castings for building, wrought-iron manufactures, raw cotton, animal greases, books, timber and wood manufactures as enumerated above, fertilizers, agricultural and mechanical tools, machinery and wagons, materials for railroads and other public works, ship-building materials, salted meat and provisions as enumerated above, lard and butter, cheese, fish and shell fish, the cereals and cereal products made free in the temporary arrangement, and also the fruits and vegetables and the forage described above, plants and seeds, and tan bark are permanently exempted from duty. The duties on corn, wheat, and flour specified in the transitory schedule are made permanent, and railroad and street cars are not to pay a higher duty than 1 per cent. *ad valorem*. On carved and polished stone, glassware, glazed tiles, earthenware, fine iron manufactures, steel and iron axles and springs, scales, needles and cutlery, tin plate, copper and brass manufactures, furniture, straw and wicker manufactures, crackers, pastes and farinas, canned goods, preserves and pickles, sauces, rubber manufactures, and rice are admitted at a reduction of 50 per cent. A reduction of 25 per cent. is allowed in the permanent schedule on refined mineral oil, cotton manufactures, rope and cordage, colors and varnishes, soap, medicines and drugs, candles, printing and wall paper, wrapping paper and paper boxes, leather and skins of all kinds, boots and shoes, trunks and traveling bags, harness and saddlery, watches and clocks, and carriages.

D

DELAWARE, a Middle Atlantic State, one of the original thirteen; ratified the Federal Constitution Dec. 7, 1787; area, 2,050 square miles. The population, according to each decennial census, was 59,096 in 1790; 64,273 in 1800; 72,674 in 1810; 72,749 in 1820; 76,748 in 1830; 78,085 in 1840; 91,532 in 1850; 112,216 in 1860; 125,015 in 1870; 146,608 in 1880; and 168,493 in 1890. Capital, Dover.

Government.—The following were the State officers during the year: Governor, Robert J. Reynolds (Democrat); Secretary of State, David

T. Marvel; Treasurer, Wilbur F. Burnite; Auditor, John P. Dulaney; Attorney-General, John Biggs; Insurance Commissioner, Isaac N. Fooks; Chief Justice of the Supreme Court, Joseph P. Comegys; Associate Justices, Ignatius C. Grubb, John W. Houston, and Charles M. Cullen; Chancellor, Willard Saulsbury.

Finances.—The balance in the State treasury on Dec. 31, 1889, was \$79,101.18; the total receipts for the year ensuing were \$289,086.47; the total expenditures were \$270,428.45; and the balance remaining on Dec. 31, 1890, was

\$97,759.20. The separate figures for each of the three funds, which make up the totals above given, are as follow: General fund, balance on Dec. 31, 1889, \$53,626.05; receipts for the year ensuing, \$170,243.09; expenditures, \$158,097.46; balance on Dec. 31, 1890, \$65,171.68. Oyster fund, balance on Dec. 31, 1889, \$10,015.43; receipts for the year ensuing, \$7,437.48; expenditures, \$5,278.84; balance on Dec. 31, 1890, \$12,177.07. School fund, balance on Dec. 31, 1889, \$15,456.70; receipts for the year ensuing, \$111,405.90; expenditures, \$106,452.15; balance on Dec. 31, 1890, \$20,410.45. The sources of State revenue are the income from investments and the taxes derived from the use of franchises granted to railroad companies and other quasi-public corporations, so that no tax, except license fees, is levied upon the citizens. The bonded State debt is \$899,750, to meet which the State holds in its general fund securities to the amount of \$673,050. Among these securities is a mortgage for \$400,000 on the property of the Junction and Breakwater Railroad, which became due this year. By an act of the General Assembly passed early in the year, the State has agreed on payment of \$215,000 on the principal of this mortgage, to continue on mortgage the balance of \$185,000 for a period of forty years, at 3 per cent. interest. Another mortgage for \$200,000, given by the Breakwater and Frankford Railroad, is to be similarly renewed.

Legislative Session.—The regular biennial session of the General Assembly began on Jan. 6, and ended on May 16. On Jan. 21, by joint resolution, Wilbur F. Burnite was chosen State Treasurer and John P. Dulaney State Auditor. Early in the session a bill was passed providing that the question of calling a constitutional convention should be submitted to the people on the third Tuesday of May. An important result of the session was a secret-ballot law. It provides that all voting rooms shall be furnished with booths—at least one for each 150 voters—so constructed that the election inspectors may easily see whether they are occupied. No person except applicants to vote and election officials shall be allowed within 30 feet of the entrance to the voting room. There shall be a roped passage, 4 feet wide and 30 feet long, through which the voters enter. Blanket ballots are to be used, with the nominees of each party collected by columns, each column headed by the name of the party and the party emblem. Voters are to mark their ballots by a stamp. Any names not on the ballot must be written with ink. A free text-book bill provides that text-books shall be supplied in the public schools at the expense of the State, appropriates \$9,000—\$3,000 for each county—to colored schools, and places these schools and the expenditure of the money in the control of the county superintendents. It also makes the Governor President of the State Board of Education, instead of the President of Delaware College, who now holds that office. Another act appropriates \$8,000 for the erection of buildings for a college of agriculture and the mechanic arts, to be open exclusively to colored students, and diverts to its maintenance 20 per cent. of the money coming to the State from the Federal Government for support of such institutions.

The sum of \$25,000 was appropriated to the Delaware College for buildings to be used by the Department of Agriculture and the Mechanic Arts. To provide for the collection and arrangement of the products of the State at the World's Fair at Chicago, \$10,000 was appropriated, and a State World's Fair commission appointed, consisting of one Republican, one Democrat, and one woman from each county. An act, known as the Five Commissioners' bill, the terms of which were much discussed before its final passage, reconstructs the levy court of New Castle County, an ancient institution for the management of county affairs. The commissioners of this court are now to be elected by the people—one from each of the five districts. The county treasurer and a county comptroller are also to be elected by the people. The former official is empowered to receive all county taxes, but such taxes, when unpaid after a fixed time, shall be placed in the hands of collectors of delinquent taxes, who are to be appointed by the levy-court commissioners. By two other acts the duties of the levy court in Kent and Sussex Counties are changed, and provision is made for the election by the people of a county treasurer in each county. Two registration acts, one for the city of Wilmington and another for the remainder of the State, were passed at this session. Two amendments to the State Constitution were proposed—one amending Article IX by substituting general election day for the third Tuesday of May, the other amending Article IV so as to legalize the use of the Myer's voting machine, so-called.

Other acts were as follow:

To prohibit the taking or sending out of the State—or, by a non-resident, out of the county—of any quail, partridge, robin, woodcock, English snipe, or wild rabbit, under a penalty of \$5 for each bird or rabbit.

For the protection of mammoose or young sturgeon.

For the protection of registered, banded, and homing pigeons.

To provide for the appointment of commissioners for the promotion of uniformity in legislation.

To punish procurors and procuresses.

The act concerning peach yellows applies to that part of the State south of Kenton and Duck Creek Hundreds goes into effect Oct. 1, and provides for the eradication of all diseased trees, except that the inspectors may, in their discretion, pass such trees as are being doctored with favorable results.

Abolishing militia encampments and everything pertaining thereto.

Prohibiting the unauthorized wearing of the insignia of the Union Veterans' League.

Giving a workman the right to enter a lien on a building for labor performed, no matter how small the claim.

To punish the embezzlement or fraudulent abstraction or misapplication of money or other articles of value by cashiers, servants, agents, or clerks.

To prevent life-insurance companies and agents doing business in the State from discriminating in rates where the risks are equal.

To legalize the issue of certain State bonds. (Providing for a reissue of the \$75,000 bonds, first ordered to be issued in 1889, for the purchase of the Delaware State Hospital for the Insane at Farnhurst, and providing that the proceeds of the sale of these bonds shall be applied to paying off the floating debt of New Castle County.)

Education.—There is no State Superintendent of Public Schools, and no figures covering

the schools of the whole State are available. A recommendation of the Governor that the appointment of such an official be authorized was rejected by the General Assembly of this year. Another recommendation that text-books in the public schools be supplied free to pupils was adopted. The increase in the revenue for school purposes derived from liquor licenses will enable this law to be enforced without the levy of any additional tax upon the people, the revenue from these sources being \$23,689.57 for 1889, under the old license law, and \$65,783.34 for 1890, under the new law.

For the school year ending in June 81 pupils were enrolled at the State College, a large increase. The prospects of the institution, educationally and financially, are promising. A new building to accommodate the Department of Mechanic Arts will soon be erected, under authority of an act of the General Assembly passed this year.

Militia.—The National Guard of the State, consists of 557 officers and men, organized into one regiment of infantry (8 companies) and one squadron of cavalry. Encampments have been held each year at an annual cost to the State of about \$10,000; but by an act of the General Assembly of this year they are hereafter abolished.

Charities.—On Jan. 1 there were 163 patients at the State Insane Hospital, of whom 93 were males and 70 females. On Oct. 1, the number had increased to 181, of whom 103 were males and 78 females.

Population by Races.—The following table shows the white and colored population of the State in 1880 and 1890, as reported in the Federal census:

COUNTIES.	WHITE.		COLORED.	
	1890.	1880.	1890.	1880.
Kent.....	24,418	24,760	8,243	8,114
New Castle.....	32,440	65,074	14,708	12,636
Sussex.....	32,571	30,326	6,076	5,692
The State.....	139,429	120,160	29,022	26,442

There were also 38 Chinese and 4 Indians in the State in 1890.

Treasury Investigation.—Late in February rumors were current that the retiring State Treasurer, William Herbert, had found difficulty in settling with his successor, and that State securities to a large amount were missing from the Treasurer's office. On March 2, a committee of the House appointed to secure information on the subject reported as follows:

The books of ex-Treasurer Herbert were delivered to Treasurer Burnite on Feb. 26, and by them it appears that the balance due the State at the time of his entrance upon the duties of the office was \$146,142.14. On Feb. 10 Mr. Herbert paid over to Mr. Burnite \$94,725.39, and on Feb. 26 he paid over two checks, one for \$20,000 and one for \$31,417.75. The check for \$20,000 Mr. Burnite was authorized to use at once; but later two checks, one for \$17,000 and one for \$3,000, were substituted for it, and the check for \$17,000 was paid by the bank on which it was drawn, leaving two checks amounting in all to \$34,417.75 yet unpaid. Subsequent to this report, further negotiations took place between Mr. Herbert and his successor, the result being that the amount due the State, as finally adjusted, was found to be \$37,397.84. This sum was

paid over by Mr. Herbert on April 8, he and his bondsmen receiving a full discharge.

In the committee report above quoted no mention was made of the missing State securities. This subject was left to a joint investigating committee appointed on the same day, March 2, and having authority to send for persons and papers. At the outset this committee found that securities supposed to be held by the State to the amount of over half a million dollars were missing, and probably had not been in the custody of any State Treasurer for a score of years. The missing assets consisted of a Breakwater and Frankford Railroad mortgage of \$200,000, 8,714 shares of Farmers' Bank stock, 254 shares of Union National Bank stock, 114 shares of National Bank of Smyrna stock, and 57 shares of stock of the National Bank of Delaware. They were supposed to be in a tin box, which was passed from one treasurer to another but which no one ever took the trouble to examine in detail. When Treasurer Burnite examined the box he found its contents to comprise only a Junction and Breakwater Railroad mortgage of \$400,000, and a State bond of \$156,750 belonging to the School fund. None of these missing securities were discovered by the committee; but the mortgage for \$200,000 was found to be duly recorded among the public records of the county, and the loss of the original could not thereby prejudice the right of the State. In the matter of the bank stock the committee secured written acknowledgments from the several banks that the State owned the shares for which it was supposed to have certificates. Evidence before the committee brought out the fact that some of the banks in question had never issued certificates to the State, while in other cases certificates had been issued early in the century. As such certificates could be of no value in the hands of any private person, the State is well protected from loss, in spite of the carelessness of its servants.

Special Election.—Pursuant to the law enacted early in the year, a special State election was held on May 19 to ascertain the sense of the people respecting a convention to revise the State Constitution. A total of 17,220 votes was cast, of which 17,105 were in favor of the convention and 115 against it. Under the provisions of the existing Constitution, the vote necessary to call a convention must be equal to a majority of the highest number of votes cast in the last three preceding general elections. Under this requirement, about 17,600 affirmative votes were needed; but as the number polled was 500 below that figure, the convention can not be called. In 1887 an election was held for the same purpose, with the same result.

DENMARK, a monarchy in northern Europe. The legislative power is vested in the Rigsdag or Diet, consisting of the Landsting, or upper house, of 66 members, of whom 54 are elected indirectly by restricted suffrage and 12 are nominated for life, and the Folkething, of which the 102 members are chosen by direct household suffrage in the ratio of 1 to 16,000 of population. The Rigsdag meets annually on the first Monday in October, and must conclude its business by the 1st of April. All money bills must be introduced by the Government in the Folkething.

The reigning sovereign is Christian IX, born

April 8, 1818. He was the fourth son of Duke Wilhelm of Schleswig-Holstein-Sonderburg-Glücksburg and of Princess Louise of Hesse-Cassel, and was selected in 1852 by the great powers as heir to the childless Frederick VII, at whose death, on Nov. 15, 1863, the male line of the house of Oldenburg that had reigned since 1448 became extinct. The heir-apparent is Prince Frederik, born June 3, 1843. His eldest sister, Princess Alexandra, born Dec. 1, 1844, married the Prince of Wales in 1863; his brother, Prince Wilhelm, born Dec. 24, 1845, was elected King of the Hellenes by the Greek Assembly in 1863 under the title of Georgios I; the second sister, Marie Dagmar, born Nov. 26, 1847, married in 1866 the Czarevich, now the Emperor of Russia; Princess Thyra, the third sister, married the Duke of Cumberland in 1878; and Prince Waldemar, the youngest brother, born Oct. 27, 1858, married the Princess Marie, eldest daughter of the Duc de Chartres in 1885. The executive power is exercised through a State Council, which was composed in 1891 of the following members: President and Minister of Finance, Jacob B. S. Estrup, appointed June 11, 1875; Minister of the Interior, H. G. Ingerslev, appointed Aug. 7, 1885; Minister of Justice and Minister for Iceland, J. M. V. Nellesmann, appointed June 11, 1875; Minister of Foreign Affairs, Otto Ditlev, Baron Rosenørn-Lehn, appointed Oct. 11, 1875; Minister of War, Col. J. J. Bahnsen, appointed Sept. 13, 1884; Minister of Marine, Commander N. F. Ravn, appointed Jan. 4, 1879; Minister of Education and Ecclesiastical Affairs, J. F. Seavenius, appointed Aug. 24, 1880.

Area and Population.—The kingdom has an area of 14,124 square miles. The population, according to the decennial census taken on Feb. 1, 1890, was 2,185,159, consisting (without the 12,954 inhabitants of the Faeroe Islands) of 1,059,222 males and 1,112,983 females. The population of the city of Copenhagen was 312,387; of the islands of the Baltic, 917,457; of the peninsula of Jutland, 942,361. For each of the two last decennial periods the increase has been 10 per cent., or at the rate of 1 per cent. per annum. The town population has increased 28·7 per cent. in the last ten years, and the rural population 3·77 per cent. The population of Copenhagen with the suburbs was 375,251; that of Aarhus, 33,308; of Odense, 30,277; of Aalborg, 19,503; of Hersens, 17,290; of Randers, 17,617. The number of marriages in 1888 was 15,091; of births, 69,220; of deaths, 43,661; surplus of births, 25,559. Emigration, which is mostly directed to the United States, took away 8,967 people in 1889, as compared with 8,659 in 1888.

The Faeroe Islands, 340 square miles in extent, form practically a part of the kingdom. Their population in 1890 was 12,954, comprising 6,225 males and 6,729 females.

Finance.—The revenue was estimated for 1889 at 54,457,514 kroner, or Danish crowns, of the value of 27 cents, and expenditure at 57,251,480 kroner. For 1891 the budget makes the revenue 54,683,727 kroner, of which 29,861,000 kroner are derived from customs and excise, 9,635,900 kroner from direct taxes, 3,916,988 kroner represent the interest on State assets, 2,630,000 kroner come from stamp duties, 2,103,000 kroner from judicial and registration fees, and 6,536,837 kroner from other

sources. The expenditure for the year ending March 31, 1891, is estimated at 62,300,803 kroner, of which 10,286,300 kroner are for military purposes, 6,620,611 kroner for the navy, 6,941,611 kroner for the debt, 3,469,978 kroner for justice, 3,324,584 kroner for finance administration, 3,326,644 kroner for the interior department, 3,430,490 kroner for pensions, 2,476,501 kroner for public worship and education, 1,223,240 kroner for the civil list, 411,544 kroner for foreign affairs, 306,616 kroner for the Rigsdag and Council of State, 94,664 kroner for Iceland, 8,712,745 kroner for improvement of state property and reduction of the debt, and 11,674,856 kroner for extraordinary purposes of state. The total amount of the debt at the end of the fiscal year 1889 was 190,331,149 kroner. The foreign debt is only 11,677,700 kroner, paying 4 per cent. interest, while the interest of the bulk of the debt held in the country is 3½ per cent. The reserve fund amassed in the Treasury for sudden emergencies amounted on March 31, 1889, to 17,821,796 kroner. The total available funds amounted to 81,905,797 kroner, nearly half the capital of the debt.

The Army.—The soldiers of the first ban, in which the period of service is from the age of twenty-two to that of thirty years, are trained for six months in the infantry and nine for the cavalry, and afterward may be called out for thirty days to take part in the annual manoeuvres. The second ban comprises all able-bodied Danes between the ages of thirty and thirty-eight years. The annual conscription is about 11,000 men. The total war effective is 59,562 men. In the first ban were enrolled in 1890 1,176 officers and 41,733 rank and file, and in the second ban 294 officers and 16,318 non-commissioned officers and soldiers.

The scheme of national defenses adopted by the Government in 1882 includes the fortification of Copenhagen on both the sea and the land sides, and the construction of forts and intrenched camps at the chief strategic points. This was expected to cost, with additions to the fleet, the sum of 72,000,000 kroner. The Rigsdag has persistently refused to consent to this expenditure. Nevertheless, the Government has built the maritime fortifications of Copenhagen, levying taxes and making payments in accordance with the estimates approved by the Landsting, but rejected by the Folkething, and promulgated by royal decree on April 1, the day following the closure of each session. Minister of War Bahnsen, in August, 1891, announced that the fortification of Copenhagen would be completed in two years more at a total cost of 35,000,000 kroner, of which 17,000,000 are for fortifications on the land side, 12,000,000 for sea forts, and 6,000,000 for guns.

The Navy.—The efficient ships in the Danish navy comprise 5 armored vessels of the first class, 3 of the second class, 1 first-class, 2 second-class, and 6 third-class cruisers, 8 iron gunboats, and 10 first-class and 10 second-class torpedo boats. The "Iver Hvitfeldt" is a barbette ship of 3,260 tons, built in 1886, carrying 2 28-ton guns, having 11½-inch armor at the water line, and a speed of 15½ knots. The "Helgoland," a central-battery ironclad, launched in 1878, has 12-inch side armor, is armed with 136-ton and 4 22-ton guns,

and can steam $13\frac{1}{2}$ knots. The other ironclads, built on older models, have thin armor and lighter guns. The "Tordenskjold," launched in 1880, is a torpedo cruiser protected by deck armor, carrying 1 heavy gun, a 50-ton or 14-inch Krupp breechloader in an armored barbette, and 2 swift torpedo launches, besides appliances for ejecting Whitehead torpedoes. Her speed is $13\frac{1}{2}$ knots. The "Pyen" is a protected cruiser, launched in 1888, of 2,700 tons displacement, capable of making $13\frac{1}{2}$ knots, and having an armament of 18 light guns. The "Valkyrie," launched in the same year, has a displacement of 3,000 tons, $2\frac{1}{2}$ -inch steel plating on the sloping deck, 2 10-ton and 6 $4\frac{1}{2}$ -ton guns, and engines of 5,000 horsepower capable of propelling the cruiser at the rate of 17 knots an hour.

Commerce and Production.—Nearly half the area of Denmark is pasture and meadow land, and one third arable land. In 1889 the harvest of wheat was 4,825,311 bushels; of rye, 16,798,647 bushels; of barley, 19,323,617 bushels; of oats, 25,758,591 bushels; of potatoes, 16,913,832 bushels; of other root crops, 28,825,434 bushels. The value of the agricultural produce was 274,396,459 kroner. There were 375,533 horses and 1,459,527 horned cattle in 1888, and during that year 17,753 horses and 89,404 head of cattle were exported, and besides these 59,155 sheep and goats and 16,926 hogs. Provisions, live animals, and cereals constitute 70 per cent. of the exports of the country. The export of butter to Great Britain has increased fivefold in twenty years, and now represents about three quarters of the exports of provisions, which make nearly half the total exports of the country. The total value of the imports in 1888 was 274,401,000 kroner, and that of the exports was 192,699,000 kroner. The values of the principal exports were as follow: Colonial products, 6,735,888 kroner; beverages, 2,813,166 kroner; textile manufactures, 4,450,466 kroner; metals and metal goods, 3,106,926 kroner; coal, 1,657,746 kroner; timber and wood manufactures, 3,824,154 kroner; grain, 15,466,086 kroner; live animals, 29,799,234 kroner; butter, eggs, and pork products, 92,455,704 kroner.

The share of each country in the imports of 1888 was: Germany, 100,280,790 kroner; Great Britain, 62,548,128 kroner; Sweden and Norway, 43,467,882 kroner; Russia, 25,657,146 kroner; United States, 9,656,802 kroner; Holland, 6,401,988 kroner; Belgium, 5,889,798 kroner; France, 5,131,188 kroner; Danish colonies, 3,321,818 kroner; the rest of America, 567,360 kroner. Of the exports, Great Britain took 116,126,046 kroner; Germany, 35,969,988 kroner; Sweden and Norway, 25,589,412 kroner; Danish colonies, 3,781,368 kroner; Russia, 3,516,570 kroner; United States, 1,979,136 kroner; France, 1,589,886 kroner; Holland, 1,012,098 kroner; Belgium, 818,226 kroner; minor American countries, 22,590 kroner.

The imports of precious metals in 1888 were 4,000,000 and the exports 2,500,000 kroner.

Navigation.—The number of vessels entered at Danish ports in 1889 was 26,833, of 2,034,140 tons, and the number cleared was 26,198, with 550,261 tons of cargo. Of those entered, 11,992, of 1,335,099 tons, were steamers; and of those cleared, 11,854, of 424,218 tons. This was exclusive of the coasting trade, which embraced 28,

381 vessels, of 498,649 tons, entered, and 29,617, of 473,375 tons, cleared.

The merchant fleet in 1890 comprised 3,096 sailing vessels, of 185,893 tons, and 311 steam vessels, of 103,824 tons, showing an increase in one year of 45 sail vessels, of 10,103 tons, and in the steamers an increase of 18 in the number and 8,173 in the tonnage.

Communications.—The state railroads in 1890 had a length of 1,000 miles. The total cost was 160,240,362 kroner. There were besides 230 miles of private railroads. The length of telegraph lines was 3,674 miles, of which 2,700 miles belonged to the Government. The total length of wires was 10,280 miles. The number of messages in 1889 was 1,539,665, of which 545,493 were domestic, 960,908 foreign, and 33,264 official. The post-office in 1888 conveyed 45,258,000 letters and post cards, and 2,932,000 samples, circulars, etc.

Iceland.—The chief of the dependencies of Denmark is Iceland, which, under the charter of Aug 1, 1874, legislates for itself and administers its own affairs, under the direction of the Danish minister for Iceland, through a governor, who has under him an *amtmand* for the western and one for the northern division of the island. The legislative authority is vested in the Althing, having 36 members, of whom 30 are elected by the people and 6 are named by the King. The area of Iceland is 36,756 square miles. The population in 1880 was 72,445. It has diminished through emigration to the United States and the Canadian northwest, and at the end of 1888 was reduced to 69,224.

Colonies.—The habitable shore of Greenland constitutes a Danish colony, which has an area estimated at 46,740 square miles. The population at the end of 1888 was 10,221, comprising 4,838 males and 5,383 females. The colony imported from Denmark in 1889 goods of the value of 453,425 kroner, and exported to Denmark produce worth 558,445 kroner.

The most productive of the colonial possessions of Denmark are the three little sugar islands in the West Indies, called the Danish Antilles. St. Croix, or Santa Cruz, is 74 square miles in extent, and has a population of 18,430; St. Thomas has an area of only 23 square miles, but contains 14,389; and St. John, 21 square miles, supports 944 inhabitants. The bulk of the population consists of negroes. The sugar exports have greatly declined in recent times.

Politics and Legislation.—A section of the Left, having grown tired of the barren struggle between the executive and legislative branches of the Government that has impeded legislative progress and nullified the Constitution for twenty years, entered into negotiations with the Conservatives during the session that ended on March 31, 1891, and came to an agreement with them on the question of the allotment of garden land to agricultural laborers and on the sugar duties. Subsequently they concurred in important changes in the poor laws, and made the beginning to a thorough revision of the tariff and internal revenue laws. The constitutional conflict, which hinges on the question of responsible or Parliamentary government, has not been abandoned by the Liberals who thus joined with the Government party for the purpose of carry-

ing through measures not involved in the interminable controversy between the majority in the Folkething and the Estrup ministry. One of these was the establishment of a free port of entry at Copenhagen, a project that first came under discussion in 1887. An area is set apart and treated as foreign territory, not subject to custom duties or regulations until the goods stored or manufactured therein are actually sold and enter into the commerce of the country, when they are treated as imported wares. The project is expected to cost 10,000,000 kroner. Both the mercantile and the industrial department will be committed to a joint-stock company, which will carry the scheme into operation within two years after receiving the cession of the requisite area for the free-port domain. The company must pay to the harbor department a specified proportion of its income, to take the place of navigation dues, which were abolished by act of the Rigsdag. The Government reserves the right to prohibit the manufacture within the free port of articles that are duty free, but the materials of which are dutiable, such as books, oleo-margarine, and artificial fertilizers. The duties on sugar, which have been heretofore 4½, 8½, 9½, and 13½ öre per pound, or approximately from 1½ to 3½ cents, were reduced to 1, 2, 3, and 6 öre, and the tax on the domestic manufacture of beet-root sugar was lowered to 2½ öre from 8½ öre. The import duty on chocolate was also lowered, and that on petroleum was fixed at 2 öre per pound, half the former rate. To compensate for the loss of revenue excise and import duties were placed upon beer, to go into effect on Oct. 1, 1891, at the same date as the reduction in the customs tariffs. It was intended to abolish the rice duty, but, owing to the opposition of the agricultural interest and the reluctance of the Government to make any greater sacrifice of revenue than it was compelled to, the duty was retained for the present. The question of the beer tax caused so serious a split in the ranks of the Left as to give the Government party a hope that it could gain a majority in the Folkething, though it also was divided on the same question. On one side it was contended that the tax would fall almost entirely on the poor, who are the chief consumers of beer, and on the other that it would promote temperance by discouraging beer drinking. There has been heretofore no excise duty on beer. The duty was fixed for the first four years at 7 kroner and after Oct. 1, 1895, at 10 öre per *tonde* of 29 gallons. Imported beer pays 10 öre per pound in bottles and 4 öre in the cask for four years, and thereafter 15 and 6 öre respectively. The poor laws have been very liberal in Denmark. The parish authorities must provide the necessities of life to all who can not maintain themselves, either in their own houses or in the public poor-houses, or by putting them out to be cared for. No one is permitted to starve or to go without clothing or shelter. Whoever accepts aid as a pauper for himself or his family forfeits his political rights. If at any time he becomes able, he is obliged to pay back to the municipal authorities the sum they have expended for his maintenance as a pauper. The custom has been for the authorities to give out the care and maintenance of the town poor to the lowest bidder. By the law passed in the session of 1890-'91

the practice of farming them out is prohibited. Husband and wife must not be separated if they conduct themselves properly; aged persons must not be subjected to annoying or disturbing surroundings; and children must not be placed under immoral influences. If persons who have received aid are able afterward to support themselves and their families entirely by their own efforts, their debt to the parish is canceled, and they are restored to all the rights of citizenship. The poor law was supplemented by an act to provide superannuation pensions for the industrious poor. All persons lacking means of support are to be provided for and maintained from the completion of their sixtieth year till their death, not as paupers, but as pensioners on the state, provided they are of good character, have never been convicted of crime, have not impoverished themselves by improvident living or by bestowing their property on their children, and have not received poor relief for the ten years immediately preceding their superannuation. The communal authorities are directed to carry out these provisions from July 1, 1891, and the Government will contribute 1,000,000 kroner a year for the first four years, and after that 2,000,000 kroner a year, to be divided in proportion to the expense entailed by the act on each commune. It is calculated that this will divide the cost equally between the parishes and the national treasury.

The division between the democratic groups of the Left and the Moderates became more clearly defined when the followers of Berg and Hørup joined with the Socialist party led by Holm in a protest against any compromise or dealings with the unconstitutional ministry. The Moderates were as firm as before in their opposition to the fortification of the capital, and to the right claimed by the ministry to remain in office with the support of the Landsting alone, or to decree a provisional budget and spend the public funds without the consent of Parliament. As both King and people are weary of the quarrel, there is a prospect that, unless a majority is found that accepts the Conservative view, the ministry will give place to one owning responsibility to Parliament. Minister Scavenius resigned on July 6, and Minister of Justice Nellemann took charge of the Department of Public Worship *ad interim*.

DICTIONARIES, NEW. In October, 1891, appeared the twenty-fourth and last number of "The Century Dictionary," an encyclopædic lexicon of the English language, prepared under the superintendence of William Dwight Whitney, Professor of Comparative Philology and Sanskrit in Yale College, and the managing editorship of Benjamin E. Smith, late of Johns Hopkins University. It contains 7,046 pages in the body of the work, and costs \$60 unbound. It has the largest vocabulary of all the dictionaries now complete. Todd's "Johnson" has 58,000 words; "Worcester's" latest edition, 116,000; "Webster," 118,000; "The Imperial," 130,000; "The Encyclopædic," 180,000; "The Century," about 215,000 words and 50,000 phrases. It takes up all the words of literature, science, and art, professions and trades, and also provincial and colloquial words, abbreviations, and foreign words and phrases which are in

familiar use in English books and conversation. Several particulars are noticeable in the articles. A systematic attempt is made for the first time to give the colloquial as well as the formal pronunciation of each familiar word. The derivation of each word and its relation to other words in kindred languages are more thoroughly given, by Prof. Whitney's special collaborator in this department, Dr. C. P. G. Scott, than in any other general dictionary. The affixes and suffixes have their full articles. The laws of phonetic change are kept in mind throughout, and the whole etymology is freshly done on the basis of the latest authorities.

A very large number of new definitions of common words have been added, thousands of non-technical words and familiar meanings, which one is surprised to find have not been in former dictionaries. Then there are definitions of an immense number of scientific terms, the work of eminent specialists in science and art, and given with scientific accuracy. The writers do not, however, confine themselves to explication of the words, but deal with the objects named, after the manner of a cyclopædia, describing and illustrating by diagrams and pictures. There are 7,500 illustrations, many of them beautiful pictures. The work is in every way a splendid specimen of the printer's art. About 300,000 illustrative quotations are given. American writers are represented with greater fullness than in any similar work.

The philological attitude of Prof. Whitney and his collaborators is further shown in the declaration of principles adopted in the orthography. The preface says: "The essentially phonetic rule of spelling, that of two or more forms which have equal authority, or are equally supported by usage, the one is to be preferred which is simplest or nearest the phonetic standard, has been adopted."

And at the end of the work is printed a "List of Amended Spellings recommended by the Philological Society of London and the American Philological Association." The list occupies seven pages. "The corrections are in the interest of etymological and historical truth, and are to be confined to words which the changes do not much disguise from the general reader." The list is printed in "The Century Dictionary," Prof. Whitney says, as a record of an important movement which promises to be of special interest to lexicographers in the near future. "It may be confidently predicted that future English dictionaries will be able to recognize to the full, as this dictionary has been able to recognize in part, the right of the English vocabulary to be rightly spelled."

The first volume of "The Encyclopædic Dictionary" bears the date of 1888, and it is now complete. It is styled "A new and original work of reference to all the words in the English language, with a full account of their origin, meaning, pronunciation, and use, with numerous illustrations." The general plan is like that of "The Century," but it is not pitched so high. It is a less costly book every way. The pronunciation is simple, not entering into niceties of unaccented syllables or colloquial use. The etymology in the early parts is much like the old "Webster," in the later like "Skeat" abridged.

The definitions are concise, the illustrations comparatively inexpensive, the encyclopædic matter easy. The page is smaller than that of "The Century" or "Murray," making a more convenient book to handle. The columns are comparatively narrow, and the matter printed in brief paragraphs, set up so as to be easily distinguished. The whole is admirable for convenient popular use.

A new edition of "Webster's Dictionary" also appeared in 1890. It is called "The International." The publishers recognized that the progress of linguistic science demanded a new working over of the old unabridged "Webster," which dated from 1864, and they have had a large corps of workers occupied upon it for more than ten years, embodying the amplification and enrichment of the language during another generation, under the supervision of Noah Porter, D. D., LL. D., ex-President of Yale College. The new vocabulary has 1,681 pages for the 1,538 of the old one, and the page is somewhat larger. The primary object of the revision has been the incorporation of the new words and meanings that have come into use. The plan has included whatever recasting of the earlier matter was required by the advance of philology, as, for instance, in the supervision and readjustment of the etymology, by Prof. Edward S. Sheldon, of Harvard. Occasion has also been taken for a comprehensive and minute scrutiny and rectification of the entire work. The pressure of new material of value and the limitation of a one-volume dictionary have enforced both condensation and selection and forbidden any attempt merely to swell the list of words. Upon a general survey of the new "Webster" in comparison with the old one, the reader notices the respelling of the vocabulary words for pronunciation, the careful indication of the sounds of the unaccented syllables by a freer use of obscure sounds, and the employment of abridgment in printing, sometimes to an inconvenient degree. A closer examination shows many and important additions and changes in every column. The new material is most conspicuous in the departments of science and technology. These have been defined and illustrated by eminent scientists and by the aid of freely provided and admirably drawn pictorial illustrations. The brief history of the language by Prof. Hadley has been revised by Prof. Kittredge, of Harvard. The introductory discussion of pronunciation has been replaced by a new and more acute treatise by Prof. Samuel Porter, stated in the language of Mr. Bell's system of phonetics, so far as that applies. The "Dictionary of Noted Names of Fiction" in the appendix has been much enlarged and improved by Prof. Henry A. Beers, of Yale. Some new grammarian ought to have taken in hand the "Pronouncing Vocabulary of English Christian Names, with their Derivation, Signification, etc." The other material of the appendix is as good as ever. "As a comprehensive popular dictionary," the publishers have reason to say, "we believe that 'Webster's International' is worthy to retain that pre-eminence which has long been held by 'Webster's Unabridged.'"

The publishers of "Worcester's Dictionary" are preparing a new edition of that favorite

work: and Messrs. Funk & Wagnalls, with the assistance of a large number of American and English scholars, are preparing a new "Standard Dictionary of the English Language," which is to be very comprehensive in the number of words treated—more than 200,000 in all. The following are some of the features embraced in the plan of this work: 1. The etymology is placed after the definition. 2. In the definition of a word the most common meaning is given first, preference being given to "order of usage" rather than the historical order. 3. The different parts of each science are so treated that the student can easily trace the definition of all its branches, and have before him the full meaning of the science—that is, while the terms belonging to each branch or subordinate branch of a science are defined in their proper vocabulary places, the references to their superior and their subordinate branches are so given that the definition of the science as a whole can easily be traced and collected, and when so collected will be found by the student to be a full and harmonious exposition of the entire science. 4. Not only is the author of each quotation given, but the edition, volume, and page where the quotation is found. 5. When thought important, the antonyms as well as the synonyms of words are recorded. 6. The scientific alphabet recommended by the American Philological Association is used in giving the pronunciation of words. 7. The amended spellings of about 4,000 words recommended by the American Philological Association and the Philological Society of London are treated as recognized forms of words and placed in the dictionary in their proper alphabetical order. 8. The large amount of matter usually given in the appendix of a dictionary is in the "Standard" grouped under a single alphabet.

Quite different from all these, and still more worthy of record as important dictionary work, is the "New English Dictionary on Historical Principles, founded mainly on the materials collected by the Philological Society, and edited by James A. H. Murray, with the assistance of many scholars and men of science." The collection of the materials for this dictionary has been a public interest of the English-speaking nations for three generations. The materials are quotations from books to exhibit the meanings of every word. To provide them, it was necessary to read all the early books and the important later books and copy out the needed passages. The Philological Society called for volunteers. Thirteen hundred readers have responded, and three and a half millions of quotations from more than five thousand authors were gradually collected. The University of Oxford assumed the pecuniary responsibilities of publication, and Dr. Murray, with thirty or more subeditors and a great host of eminent helpers, is working up the dictionary. The primary interest is in the historic materials. By classifying the slips under their words, and arranging the slips of each word in order of time, a complete biography of each word is drawn up, verified year by year by exact quotation of the original records. So much unsuspected knowledge is brought out in this way, that the most accomplished students of English feel as if they know next to nothing

about any word before the slips of Dr. Murray have been examined. One hundred and eighty-three meanings of the verb *cast* are found, sixty-three of them obsolete. Most of them are older than Shakespeare. Many a word makes a book. The further working up of the dictionary—the etymology, the pronunciation, the orthography—is worthy of the historic material. Seven parts have now been issued. Two appeared during the year 1891, 352 pages in one and 344 pages (from *e* to *every*) in the other, the last being under the editorship of Henry Bradley, President of the Philological Society, the first from Dr. Murray. The vocabulary of this dictionary is larger than that of any other, the number of meanings much greater. In linguistic interest no dictionary compares with it. It is not encyclopædic; it has no pictures.

The German dictionary begun by Jacob and William Grimm, the prototype of the great historical dictionaries, of which the first number was issued in 1854, is going steadily on under the care of Drs. Heyne, Hildebrand, Lexer, and Wülcker. In 1891 Hildebrand advanced in *g* to *geriesel*, Heyne in *r* to *ruck*, Lexer in *t* to *todestag*, Wülcker in *v* to *verleihen*. It is likely to be completed during the present century. Meantime Heyne is editing a "German Webster."

DISASTERS IN 1891. Startling as are the figures given herewith, they fall far short of the truth. If all losses of life and property were recorded as published in the daily press the list would greatly exceed any reasonable limit. In the case of train accidents alone is an approximate degree of accuracy attainable, since the statistics are from semi-official sources, as compiled by the "Railroad Gazette." Minor accidents involving the loss of one life, the maiming of one or two individuals, or the destruction of a comparatively small amount of property, are usually omitted. The summaries at the end of each month's record include all train accidents, whether mentioned in the context or not.

January 1. Fires: residence of Secretary Blaine, Washington, D. C., valuable works of arts and furniture damaged; State Prison burned, Clinton, N. Y., loss \$175,000. Trains wrecked: Oskaloosa, Iowa, 1 killed, several hurt; Wichita, Kan., 3 killed; Paterson, N. J., 2 killed, 2 hurt.

2. Fires: 20 young girls badly burned at a school festival, Leeds, England. New York: 2 theatres burned, the Fifth Avenue and Hermann's, with much of the adjacent block. Train wrecked near New Durham, N. J., 6 hurt, cause, fog.

3. Grade-crossing accident near Northampton, Mass., sleighing party run over, 2 killed, 4 hurt. Fires: large brewery, Richmond, Va.; tannery, Fulton, N. Y., loss, \$100,000; mills, Providence, R. I., loss, \$100,000; hotel burned, Corsicana, Texas, 4 lives lost. Explosion in a mine, Ostrau, Poland, 60 killed. Collision at sea: steamer *Caroline* sunk in the English Channel.

4. Fire in Aurora Mo., loss, \$30,000.

5. Hoisting gear breaks in the shaft of Utica mine, near San Andreas, Cal., 12 killed. Pesth, Hungary: ice breaks in Danube river, many drowned.

6. Three lost children found frozen to death, Barber County, Kan. Fire: toy factory burned, St. Louis, loss, \$30,000. Disastrous snow blockade in Europe.

7. Fire at Cairo, Ill., loss, \$100,000. Train derailed near Gulfey City, S. C., 4 killed, 2 hurt.

8. Cyclone in Texas, much damage done near

Sherman. Explosion: 2 men killed by a cartridge, Amherst, Mass. Lancaster, Pa.: 2 men killed by a fall from a scaffold.

9. Severe weather in Europe. Snow as far south as Algiers.

11. Fire: a lumber mill burned, Norfolk, Va., loss, \$100,000. Steamers in collision on the Firth of Forth, 13 drowned. Locomotive falls from elevated railroad, New York city, engineer hurt, signals misunderstood.

12. Damage from ice gorges in the New England rivers and disastrously high tides on the coast. Steamer City of Washington damaged by a hurricane, 2 lives lost. Fires: Cambridgeport, Mass., loss, \$50,000; Chicago, Ill., stables burned, loss, \$40,000. Avalanche in Bosnia, 17 killed.

13. Shipwreck: schooner Otter on the Long Island coast, 2 drowned. Locomotive boiler bursts near Ashland, Pa., 2 killed. France: ice breaks in the Seine river, 9 drowned.

14. Runaway car near Westport, N. Y., 4 killed. Grade-crossing accident near Clyde, Ohio: sleighing party run over, 4 killed. Fire: Richmond, Va., locomotive works burned, loss, \$25,000.

15. Siberia: a pestilence prevails, said to be "the black death," thousands die.

16. Earthquake: a shock of considerable violence in New Hampshire. Snow storm in southern Italy.

17. Fire: carpet mills in Philadelphia, loss, 1,500,000. Explosion: brewery in Aurora, Ind., 2 killed, 4 hurt. Severe cold threatens the lives of peasantry in many parts of Europe.

18. Explosion: natural gas at Findlay, Ohio, a hotel wrecked, 8 killed, 6 hurt. Fire: tin warehouse in Pittsburg, loss, \$45,000.

19. Severe weather in Europe, many deaths and widespread suffering. Train derailed by robbers near Brownsville, Texas, 2 hurt, passengers locked in freight car, express robbed.

20. Fires: Electric works in Chicago, loss, \$142,000. Earthquake in Switzerland.

21. Fires: Hillsborough, N. Dak., loss, \$70,000; opera house burned, Winona, Minn. Explosion: fire-damp in a Russian mine, about 100 killed.

22. Heavy rains cause much damage in the Middle and New England States.

23. An aged man and his wife run over and killed by a train near Washington. Fire: in Buffalo, N. Y., loss, \$250,000, 1 fireman killed, 4 hurt.

24. Fires: in Jersey City, 3 killed, 6 hurt, most of them firemen; fire engine run down by a railway train, its driver killed. Germany: explosion in a mine, 40 killed.

25. Disastrous storm on the north Atlantic coast: at Birmingham, Conn., damage to the amount of \$1,000,000 has been done within a few days. Fires: paper mill burned, Appleton, Wis., loss, \$175,000; Spokane Falls, Wash., loss, \$61,000. Train wrecked near Butte, Mont., 1 killed, 8 hurt.

26. Explosion: fire-damp in coke works, Mount Pleasant, Pa., 110 killed. Army transport train wrecked by collision near Florence, Kan., 3 soldiers killed, 10 hurt, many cavalry horses killed and hurt.

29. Three foot passengers killed by a railway train near Gallitzin, Pa. Blizzard in the Northwest, traffic generally stopped. Faulty construction: Omaha, Western Art Association building falls, many valuable works ruined. Landslide in Greece, 25 killed.

30. Fire: Cygnet, Ohio, 6 blocks of buildings burned, 2 lives lost.

31. Faulty construction: hoisting gear gives way, Harrisburg, Pa., 2 killed.

Summary of train accidents in January: 106 collisions, 93, derailments, 12 miscellaneous; total, 211. Killed: 38 employés, 8 passengers; total, 46. Hurt: 118 employés, 90 passengers, 2 trespassers; total, 210.

February 1. Fire: jail burned at Friar's Point, Miss., 3 lives lost. Train wrecked near Dillon, Mont., 2 killed, several injured.

2. Blizzard in the Northwest, many fishermen adrift on Lake Huron. Train wrecked near Griffen, Ga., 14 hurt.

3. Train wrecked near Cory, Pa., 2 killed, 3 hurt.

4. Mines flooded at Jeansville, Pa., 18 drowned, and Wilkesbarre, Pa., 3 drowned. Fires: Board of Trade building burned, Dubuque, Iowa, loss, \$20,000; Winnebago, Ill., loss, \$50,000; railroad warehouse burned, Findlay, Ohio.

5. Fire: poorhouse burned, Waterville, Me., 1 life lost. Train wrecked near Shelby, Ala., 3 killed.

6. Explosion: giant powder near Kokomo, Col., 2 killed, 3 hurt. Landslide, Switzerland, 22 wood-cutters buried.

7. Explosions: giant powder near Wyoming, Pa., 2 killed, 1 hurt; steam boiler, Riedsville, Ga., 6 killed. Blizzard in the Northwest. Fire: Ellisville, Ill., almost wholly destroyed.

8. Blizzard in North and West, wires down, traffic blockaded. Shipwrecks: supposed loss of steamer Simon Dumois; steamer Chiswick aground off Scilly Isles, 11 lives lost.

9. Violent wind at Helena, Mont., much damage. Train derailed, Randallia, Iowa, 19 hurt, wreck burned.

11. Train wrecked near Ingleside, Mo., 2 killed, 4 hurt.

12. Explosions: natural gas at Marietta, Ind., 2 hurt; steam boiler at Quebec, 20 killed.

14. Fire in the general post-office, New York, 1 killed, \$25,000 damage. Train wrecked near Susquehanna, Pa., 2 killed, 10 hurt.

15. Fire: carpet factory burned, Philadelphia, loss, \$150,000, cause, an electric wire.

16. Explosion in a mine, Scottsdale, Pa., 4 killed. A rock falls upon a passenger train near Duquesne Heights, Pa., 1 woman killed, 3 men hurt. Fires: St. Mary's hospital burned, Rochester, N. Y.; oil cars burned, Philadelphia, 1 explodes, 4 hurt; buildings burned, New Westminster, British Columbia, loss, about \$500,000, 1 killed.

17-20. Destructive floods in the Ohio watershed, all industries suspended, 2,500 houses flooded in Wheeling alone.

17. Fire: steamer burned at Wuhu, China, about 200 lives lost.

18. Shipwreck: Italian bark Mascotta, sunk in New York harbor, 4 lives lost. Fire: tenement house burned, Brooklyn, N. Y., a mother and 4 children perish.

19. Fires: a keg of powder explodes in burning building, Watseka, Ill., several hurt; opera house burned, Rochester, N. Y.; roundhouse burned, Kansas City, with 18 locomotives.

20-25. Floods in Arizona, Yuma nearly destroyed.

20. Train wrecked, New York city, 6 killed, 9 hurt, wreck fired.

21. Fire: tenement house burned, Brooklyn, N. Y., 6 lives lost. Shipwreck: British Steamer Iowa, sunk by ice, all hands saved by steamer Chester, 422 cattle lost.

22. Shipwreck: ship Elizabeth, off San Francisco, 18 lives lost. Fires: buildings burned, Kansas City, estimated loss, \$240,000; opera house burned, Evansville, Ind.

25. Tornado: many buildings destroyed in Indiana.

26. Fires: Minneapolis, loss, \$75,000; grain elevator and warehouse burned, Chicago, estimated loss, \$150,000.

28. Tram cable breaks in the Marion County mines, Tennessee, 2 killed, 11 hurt.

Summary of train accidents in February: 93 collisions, 93 derailments, 10 miscellaneous; total, 196. Killed: 52 employés, 7 passengers, 2 trespassers; total, 61. Hurt: 161 employés, 108 passengers, 6 trespassers, total, 275.

March 1. Lightning strikes 4 churches and many dwellings in Massachusetts. Fire: 20 buildings burned, Hermon, N. Y., loss, \$75,000.

2. Explosion: steam boiler, Charleston, Mo., 3 killed. Floods continue in Arizona. Gale on the James river, Virginia, 20 lives lost.

3. Pontoon bridge, St. Charles, Mo., wrecked by

ice, loss, \$20,000, 5 men supposed to be lost. Fire: dye works burned, Roxbury, Mass., loss, \$75,000, cause, a lamp explosion.

5. Snow slide in Utah, 4 killed. Fire: steamer City of Richmond burned in New York, loss, \$200,000.

6. Trains in collision near Mineral Point, Pa., 7 hurt.

7. Tornado in Mississippi, 2 killed. A father and his 2 daughters killed by a train near Lima, Ohio.

8. Destructive "blizzard" in Great Britain, railway traffic blocked all over the kingdom, deaths from cold, shipwrecks, and much suffering everywhere, about 70 lives lost. Train wrecked near Havana, Ill., 3 killed, 11 hurt.

9. Fire: business building burned, Buffalo, estimated loss, \$225,000.

10. Floods: levees give way on the Mississippi river. Explosion: steam boiler bursts at Ettingham, Ill., 3 killed. Derrick falls in Boston, 2 killed. Fires: banks burned, Pittsburgh, Pa., loss, \$300,000 (insured \$225,000); Omaha, Neb., loss, \$150,000 (insured \$120,000); cotton mills burned, Paola, S. C., estimated loss, \$90,000. Destructive floods in Russia and Spain.

11. Fires: Syracuse, N. Y., estimated loss, \$1,000,000; insane asylum burned, Nashville, Tenn., 9 lives lost; Chicago, Flood Block burned, loss, \$50,000; Findlay, Ohio, glass works burned, loss, \$40,000. Shipwreck: United States steamship Galena on Gay Head, Martha's Vineyard; Government tug Nina lost at the same time and place; U. S. torpedo boat Triana wrecked while on the way to offer aid. (The Galena was afterward floated off.)

12. Fire: glass works burned, Fostoria, Ohio, loss, \$30,000.

13. Explosion in the arsenal at Omdurman, Egypt, about 100 dervishes killed. Shipwreck: British steamer Roxborough Castle sunk in collision off Scilly Islands, 22 lost.

14. Fire: business blocks burned, New York city, loss, \$1,500,000. Explosion: blasting powder in Bendie colliery, Pa., 2 killed. Train wrecked near Greencastle, Mo., 1 killed, 12 hurt, cause, a broken wheel.

15. Shipwreck: steamer Utopia sunk in collision with British ironclad at Gibraltar, 560 lives lost. Fires: New York, tenement house burned, 4 killed, several hurt; Joliet, Ill., opera house burned, loss, \$50,000.

16. Fires: engine house burned, Houghton, Mich., loss, \$30,000; opera house burned, Detroit, Mich., loss, \$15,000.

17. Fires: store burned, St. Joseph, Mo., estimated loss, \$110,000; ice houses burned, Oswego, Ill., loss, \$62,000. Train wrecked near Barry Station, Pa., 3 killed, 4 hurt.

18. Flood: levees give way on the lower Mississippi.

19. Train wrecked, Racine, Wis., 1 killed, 4 hurt, wreck fired.

20. Shipwreck: steamer Strathairn, on the North Carolina coast, 19 lost. Train accident: Racine Junction, Wis., 2 killed.

21. Shipwreck: Norwegian bark Dictator near Cape Henry, 9 lives lost. Fires: hotel, Jacksonville, Fla.; court house, Cork, Ireland. Trains wrecked: Las Vegas, New Mexico, 1 killed, 4 hurt; Wells Bridge, N. Y., 1 killed, 3 hurt, wreck fired.

22. Severe gale in the North and Middle Atlantic States, many vessels wrecked. Fire: Camden, N. J., railroad buildings burned.

23. Explosion: smelting furnace bursts, Terre Haute, Ind., 2 killed.

Summary of train accidents in March: 74 collisions, 128 derailments, 10 miscellaneous; total, 212. Killed: 25 employés, 6 passengers, 3 trespassers; total, 44. Hurt: 96 employés, 90 passengers, 5 trespassers; total, 191.

April 2. Train wrecked near Hornellsville, N. Y., 3 killed, 2 hurt. Fires: 5 buildings burned, Campello, Mass.; several houses burned, Brockton, Mass.

3. Fire: oil works burned, Pittsburgh, loss, \$150,000. Explosion: fire-damp in an English colliery, 10 killed, several hurt.

4. Severe storm on the north Atlantic, much damage to shipping on the New England coast.

5. Fire: building burned, Rochester, Pa., 9 lives lost. Train derailed near Westfield, Mass., 3 hurt, cause, ties maliciously placed on track.

6. Explosion: natural gas in a Pittsburgh tenement house, 11 hurt. Fire: gas works burned St. Augustine, Fla.

7. Explosion in the Sultan's palace, Zanzibar, 13 killed, 20 hurt.

8. Fire: Chicago, several buildings burned, estimated loss, \$1,000,000. Drowned: 4 men at Orange, Mass. Explosion of glycerine at Pittsburgh, 3 killed.

9. Five men drowned at St. Louis. Trains in collision near Tryon City, N. C., 5 killed, 10 hurt.

10. Fire: stock sheds burned, Pittsburgh, with 187 cattle, loss, \$40,000. Trains in collision near Mount Sterling, Ohio, 3 killed.

11. Train accident near Santa Fé, New Mexico, 3 killed. Fires: coal breaker burned, Olyphant, Pa., 500 men out of work, loss, \$100,000; Albany, N. Y., loss, \$40,000. Railroad bridge breaks near Gainesville, Texas, 3 killed.

12. Shipwreck: British steamer Glamorgan sunk in collision. Train accident near Fallston, Md., bridge breaks, wreck burned, 4 killed, 1 hurt, cause, an unsound trestle. Fires: grain elevator burned, Utica, N. Y., loss, \$50,000; Evansville, Ind., loss, \$90,000.

13. Shipwreck: British ship St. Cathariss, off the Caroline Islands, 90 lives lost. Tornado: Marion, Ind., buildings wrecked, several persons hurt. Five men drowned near Addison, W. Va.

14. Trains in collision near Kipton, Ohio, 9 killed, 4 hurt. Explosions: at Aspen, Col.; and Norristown, Pa., 5 killed. Fire: Little Rock, Ark., loss, \$500,000.

15. Fire: smelting works burned, St. Louis, loss, \$50,000.

16. Fires: business blocks burned, Rome, N. Y., loss, \$500,000; furniture factory burned, Chicago, loss, about \$100,000.

17. Poisoned: 5 died, several sickened by tainted water in Burlington, Iowa. Fires: machine shop burned, Denver, loss, \$125,000 (insured \$60,000). Explosion of gasoline in Chicago, several buildings destroyed, 2 persons killed. Explosion in a fort near Rome, Italy, 7 killed, many hurt.

18. Train derailed near Indianapolis, 6 hurt, cause, broken rail, flaw undiscoverable.

19. Trains in collision near Warings, Md., wreck burned, 4 killed, 1 hurt. Fires: cotton house burned, Honey Grove, Texas, loss, \$125,000; elevator burned, Kansas City, loss, \$50,000.

20. Bad construction: opera house falls at Troy, Ala., 2 killed, many hurt. Fire in Chattanooga, loss, \$180,000.

Summary of train accidents in April: 67 collisions, 108 derailments, 6 miscellaneous; total, 181. Killed: 52 employés, 4 trespassers; total, 56. Hurt: 100 employés, 42 passengers, 7 trespassers; total, 149.

May 1. Great forest fires in New Jersey and Pennsylvania. Explosion: fireworks factory in New York, 4 girls killed.

2. Fires: the towns of Austin, Minn., and St. Kilian, Wis., were nearly destroyed; Altoona, \$75,000 loss; Tyrone, Pa., \$20,000 loss.

3. Fire: Upper Marlborough, Md., 5 lives lost.

4. Fire: iron works burned, Breaker's Island, N. Y., loss, \$400,000; coal mine damaged, Edwardsville, Pa., loss, \$250,000.

5. Fire: wheel factory burned, Sidney, Ohio, loss, \$100,000.

6. Explosion in a West Virginian mine, 4 killed.

7. Shipwreck: brig Edith sunk by collision in Chesapeake Bay.

8. Church building falls while under repair, at Aahland, Ky., 4 killed. Train derailed near Trinidad, Col., 3 men and 300 cattle killed. Forest fires in Wisconsin and Michigan.

10. Trains in collision near Cloverdale, Va., 2 killed, 1 hurt, and near Shepherd, Mich., 3 killed, 13 hurt. Train cut off, wrecked and burned by forest fires near Moore's Run, Pa., several lives lost. Fire: Salem, S. Dak., elevators burned, loss, \$50,000; opera house and other buildings, Plano, Ill.

11. Fires: factory burned, New York city, loss, \$140,000; planing mill and dwellings, Slatington, Pa., loss, \$90,000. Explosion: petroleum gas, on steamer Tancarville, at Newport, England, 8 killed, 25 hurt.

12. Forest fires destroy several towns in Wisconsin, and damage farm and oil property in Pennsylvania.

13. Floods sweep away several villages on the Rio Grande. Explosion: boiler bursts at Germania, W. Va., 4 killed, 2 hurt.

14. Fires: elevators burned, Bozeman, Mont., loss, \$75,000; oil refinery burned, Philadelphia, loss, \$100,000; stores in Hardy, Neb., loss, \$50,000.

15. Mining accident, Plymouth, Pa., 3 killed.

16. Fire: about 300 buildings burned, Muskegon, Mich., estimated loss, \$500,000 (insured \$300,000); Linesville, Pa., loss, \$75,000; Princeton, Mo., loss, \$25,000; many other fires of less importance.

17. Volcanic eruption in Armenia, several villages destroyed and many lives lost. Train wrecked on Long Island, N. Y., 2 killed, 3 hurt.

18. Train wrecked near Phelan, Ala., 2 killed, 1 hurt. Fires: factory burned, Joliet, Ill.; Seattle, Wash., loss, \$40,000; Lamonte, Mo., incendiary, loss, \$20,000.

19. Explosion: on construction train, near Tarrytown, N. Y., 13 killed, 22 hurt, cause, careless handling of high explosives. Sewer breaks at Providence, R. I., 11 men buried, 4 killed. Fires: business blocks burned, Jacksonville, Fla., estimated loss, \$500,000; hotel and cottages, Hancock, N. H., loss, \$20,000.

20. Destructive hail storms in Texas. Fire: linseed-oil works, Sioux City, Neb., loss, \$150,000.

21. Train wrecked near Borden, Texas, 1 soldier killed, 4 hurt. Tornadoes in Missouri, Kansas, and Illinois. Fires in Minneapolis, West Albany, N. Y., Houston, Texas, and Logansport, Ind.

22. Explosion: 6 miners killed near Birmingham, Ala.

23. Tornadoes in Minnesota, the Dakotas, and Nebraska. Fires: prison buildings, Jefferson City, Mo., loss, \$170,000; Detroit, Mich., loss, \$250,000; hotels in Richmond, Ky., loss, \$80,000.

25. Grade-crossing accident, Latrobe, Pa., 2 killed, 2 hurt.

29. Explosion: Frankfort, Ind., steam boiler bursts, 2 killed, 6 hurt.

30. Explosion: dynamite in a mine, near Silver Plume, Col., 4 killed. Fires: business houses burned, Wahpeton, N. Dak., loss, \$100,000; Rice Lake, Wis., stores and dwellings burned, loss, \$37,000.

31. Hurricane: Lake Ilman, Russia, many lumber vessels lost with their crews.

Summary of train accidents in May: 67 collisions, 80 derailments, 19 miscellaneous; total, 166. Killed: 54 employes, 2 passengers, 7 trespassers; total, 63. Hurt: 98 employes, 50 passengers, 8 trespassers; total, 156.

June 1. Explosion: Milford, Va., boiler bursts, 3 killed. Fires: a church and business block burned in Los Angeles, Cal.; theatre burned in Nashville, Tenn.

2. Tornado near Watertown, S. Dak., 3 killed. Heavy damage by storms in the Western States.

3. Explosion: Bedford, Ind., boiler bursts, 5 killed.

6. Fire: factory burned, Cleveland, Ohio, loss, \$150,000 (insured \$100,000).

7. Explosion: dynamite blast, Chattanooga, 3 killed, 1 hurt. Earthquake shocks in Italy and New Jersey, in Italy 3 killed, many hurt.

8. Train collision near Savannah, Ga., wreck burned, 2 killed, 6 hurt. Floods in the Red river region, Texas, many cattle drowned.

9. Train collision near Frink, Kan., 3 killed, 6 hurt.

10. Fires: opera house, Baltimore; hotel, Birmingham, Ala.; court house, Fort Pierre, S. Dak., all records burned.

11. Train wrecked near Roots Station, Pa., 3 killed, 3 hurt.

15. Train wrecked near Port Costa, Cal., 2 killed, several hurt. Train derailed near Chilton, Wis., 10 hurt.

16. Train derailed near Coon Rapids, Iowa, 3 killed, 20 hurt, obstacle maliciously placed on track. Train accident: Switzerland, 130 killed, many injured. Cloud-burst: Newmansville, Texas, several buildings destroyed. Fires: Buffalo, loss, \$40,000; Mondovi, Wis., loss, \$35,000; Seabright, N. J., loss, \$300,000.

19. Train wrecked near Sauve, La., 6 killed, 4 hurt. Four men from revenue cutter Bear drowned in Icy Bay, Alaska.

20. Escaping gas: 3 girls killed in New York. Five men and 2 women drowned near Baltimore. Fires: factory in St. Louis, loss, \$70,000; Marquette, Mich., and Milford, Me., heavy losses.

21. Train derailed near Dover, Ohio, 1 killed, 30 hurt. Fire: Naval workshops burned, Pola, Austria. Train accident near Londonderry, Ireland, several killed, and many hurt.

22. Fires: Fall River, Mass., loss, \$60,000; Jefferson, Texas, loss, \$75,000.

23. Train wrecked, White Plains, N. Y., 11 hurt. Earthquake, (slight), Charleston, S. C. Train accident near Mellion, Ky., 4 killed.

24. Cloud-burst: Cherokee Co., N. C., 2 killed, much damage done. Disastrous storms in western Iowa.

25. Train derailed near Van Buren, Ark., 1 killed, 21 hurt. Fires: Elmira, N. Y., loss, \$75,000; New London, Conn., loss, \$75,000; Birmingham, Ala., loss, \$20,000.

26. Tornado: Mount Carmel, Pa., 7 killed. Grade-crossing accident, Grafton, Neb., 2 women killed. Train derailed by washout near Rosebud, Mont., 14 hurt.

27. Fires: Seventy-first Regiment Armory, New York, destroyed; Elwood, Ind., glass works burned, loss, \$60,000; Newburyport, Mass., loss, \$75,000; Cleveland, Ohio, loss, \$50,000.

28. Fire: coffee mill, Baltimore, loss, \$100,000.

29. Falling wall, Milwaukee, 3 killed. Fires: storehouse burned, St. Louis, Mo., loss, \$250,000; furniture warehouse burned, Rockford, Ill., loss, \$100,000.

30. Forty-three persons poisoned by eating ice-cream, at Brushton, N. Y.

Summary of train accidents in June: 50 collisions, 109 derailments, 8 miscellaneous; total, 167. Killed: 50 employes, 5 passengers, 5 trespassers; total, 60. Hurt: 130 employes, 107 passengers; total, 237.

July 2. Tornadoes in Iowa, Missouri, and in Rhenish Prussia, many buildings wrecked. A tourist fell into the crater of Vesuvius and perished.

3. Trains in collision, Ravenna, Ohio, 21 killed, 27 hurt, wreck burned.

4. Train derailed near Charleston, West Va., 17 killed, 48 hurt. Obstruction wired to rail near Lansing, Iowa, train thrown into Mississippi river. Many fatal accidents from fireworks and the like. A church and 4 dwellings burned in San Francisco, value, \$100,000, cause, fireworks. Lightning: 3 students killed and several hurt at St. Inigoes Villa, Maryland.

5. Train wrecked near Aspen Junction, Col., 9 killed, 6 hurt. Hurricane at Galveston, Texas, much damage to shipping. Fire: theatre burned, St. Paul, Minn. Drowned: 18 soldiers in the Aar river, Switzerland.

6. Tornado in Louisiana and Mississippi, 10 killed, about 50 hurt, some fatally. Explosion: powder mill at Jermyn, Pa., 2 killed. Fires at Portland, Ore., Duluth, Minn., and Jeffersonville, Ind.

8. Fires: hat factory in Cincinnati, estimated loss nearly \$1,000,000; tobacco warehouse, Clarksville, Tenn., loss, \$160,000.

9. Fire: saw mill burned, Jennings, Mich., loss \$200,000.

12. Extensive forest fires near Marquette, Mich.

13. Fire: hotel burned, Duluth, Minn.

16. Train wrecked near Ute Pass, Colorado, brakes failed to work, 11 ore and bullion cars ran away down grade and were wrecked, 3 killed. Fires: flour works, Shawmut, Me., loss, \$200,000; ice houses, brewery, etc., Sandusky, Ohio, loss, \$170,000; business block in Altoona, Pa.

16. Tornado, West Superior, Wis., 40 men buried in a wrecked building, many killed.

17. Fires: Lynn, Mass., \$200,000 damage; business blocks burned, Glasgow, Ky.

18. Train wrecked near Manchester, England, 11 killed. Five men drowned in Tennessee river near Murray. Trestle falls near Pittsburg, Pa., 3 men drowned. Lightning: Clinton, Wis., 2 killed. Destructive fires in Roundhead, Ohio, and Gosport, Ind.

19. Lightning: 2 killed in North Carolina.

20. Fire: the village of Sawyerville, Mich., destroyed, loss, nearly \$300,000.

21. Explosion: steam boiler at Lake View, Mich., 3 killed, several hurt. Shipwreck: steamer Circe, off Anticosti Island.

22. Train wrecked near Glenbrook, Nev., 3 killed, 2 hurt. Explosion: thrashing machine, in Edmondson County, Ky., 3 killed, 5 badly hurt. Destructive hail storms in Minnesota and South Dakota.

24. Train collision: Carlisle, Col., 5 killed, 4 hurt. Fire: textile mills burned in Philadelphia, loss, about \$1,000,000.

25. Excursion train wrecked near Middletown, Ohio, 7 killed, many hurt. Landslide at Idaho Springs. Boat upsets at Seven Islands, St. Lawrence river, 7 drowned. Fires: hotel and buildings burned at Newport News, Va., 4 lives lost; warehouses, etc., at Dallas, Texas, loss, \$300,000.

26. Earthquake (slight), Evansville, Ind. At a picnic near Wheeling, W. Va., a lady was killed, another wounded, and a man hurt by the discharge of a gun aimed in jest.

27. Grade-crossing accident at Elmira, N. Y., 6 killed, 5 of them women. Fires in Blair, Wis., loss, \$75,000, and Little Rock, Ark., loss, \$60,000. Train wrecked at St.-Mandé, France, 43 killed, about 100 hurt. Lightning: 3 killed at Aylesbury, England.

28. Destructive hail at Elm Creek, Neb. Fire (incendiary) at New Brunswick, N. J., factory burned, loss \$50,000.

Summary of train accidents in July: 73 collisions, 91 derailments, 5 miscellaneous; total, 169. Killed: 29 employés, 54 passengers, 9 trespassers; total, 92. Hurt: 91 employés, 120 passengers, 1 trespasser; total, 212.

August 5. Train wrecked near Champlain, N. Y., 2 killed, 12 hurt. Train derailed near Kalamazoo, Mich., 60 hurt.

10. Train collision near Branford, Conn., 10 hurt.

12. Faulty construction: deck of an excursion barge gives way near Oyster Bay, N. Y., 14 killed, about 50 hurt.

16. Train wrecked near Brighton, Col., 2 killed, 1 hurt.

17. Trains wrecked near Berne, Switzerland, 14 killed, many hurt. Flood in Hayti, bridge gives way, 14 lives lost.

18. Hurricane at Martinique, all the shipping in port wrecked, many buildings destroyed, about 340 lives lost, the official estimate places damages at \$10,000,000. Giant powder explodes near Bourke, Idaho, 6 killed.

21. Severe storms in the West and South with earthquake shocks and disastrous floods. Fires: Winthrop, Mass., 2 men and 10 horses suffocated; New Orleans, La., loss, \$400,000; Hillsborough, Texas, loss, \$65,000. Violent storm in the English Channel.

22. Buildings fall in Park Place, New York, 61 killed, cause, overloaded floors. Many fatal accidents to individuals.

23. Fire: toy store burned in New York, loss,

\$110,000. Extensive forest fires in Nevada and Idaho. A cloud-burst destroys property in Pottsville, Pa.

24. Destructive flood in the Schuylkill valley. Three children locked in a chest by playmates, and forgotten, all perish (Ironton, Ohio).

25. Fires: stores in Brooklyn, N. Y., loss, \$100,000; court house and other buildings burned, Charleston, Ark., loss, \$50,000. Shipwrecks: an Italian steamer and 2 cutters at Senegal, Africa, 18 lives lost.

26. Severe storm on the coast of England.

27. Train derailed near Statesville, N. C., 22 killed, 17 hurt. Lightning: several persons killed in Trieste, Austria. England, crops in the midland and southern counties ruined by rain.

28. Newark, N. J., a tornado destroys many buildings. Collision at sea: steamers Eashy and Gambier near Sydney, 26 lives lost.

29. Balloon accident, Detroit, aéronaut killed. Prairie fire in South Dakota, standing crops burned.

30. Severe storm and much damage on the New Jersey coast. Fire: Natrona, Pa., salt works burned, loss, 100,000; Quanah, Texas, business blocks burned, loss, \$60,000. Explosion in a church at Bourbon, Ind., building wrecked.

31. Trains wrecked: near Webster, Cal., 2 killed, 10 hurt; Tell City, Ind., 4 killed, 20 hurt; and near Louisville, 13 killed, 18 hurt. Fire: Winnemucca, Nev., estimated loss, \$190,000. Explosion in a Somersetshire colliery, England, 10 killed, 12 hurt. Typhoon in Japan, about 250 lives lost.

Summary of train accidents in August: 111 collisions, 110 derailments, 2 miscellaneous; total, 223. Killed: 36 employés, 42 passengers, 13 trespassers; total, 91. Hurt: 152 employés, 186 passengers, 3 trespassers; total, 341.

September 1. Fire at Pella, Iowa, estimated loss, \$30,000. Shipwreck: British steamer Dumurray capsized, 8 lives lost.

2. Prairie fire near Grand Forks, N. Dak., 5,000 acres of hay land burned over, cause, a locomotive. Ireland, destructive flood in the River Barrow.

3. Shipwreck: schooner Pannonia, near Hawaii, 11 lives lost. Lightning strikes near Magnolia, Ark., 4 killed.

4. Fire: business block burned, Attalla, Ill., estimated loss, \$75,000.

5. Dynamite exploded (presumably by malice) in a thrashing machine near Findlay, Ohio, 1 killed, 4 hurt. Forest fires in the Cascade Range, Wash., much valuable timber burned.

6. Many persons poisoned by impure water from a well near Dundee, Mich., 5 died, 20 sickened. Collision at sea, steamship Arizona sinks an unknown sailing vessel.

7. Train derailed on bridge near Clay City, Ky., 2 killed.

9. Locomotive explosion, Oyster Bay, N. Y., 3 killed, 1 hurt. Earthquake, San Salvador; about 40 killed, 60 hurt.

10. Train derailed, near Montezuma, Iowa, cause, a broken rail, 14 hurt.

11. Shipwrecks: steamers Tourmania (Italian) and Thessalin (Greek) in collision off the coast of Greece, Tourmania sinks, 64 lives lost; schooner Georgiana capsized near Halifax, N. S., 16 lives lost; steam launch sunk in collision near Dublin, Ireland, 15 lives lost. Warren, Ohio, 3 persons run over and killed by a railway train.

12. Saultsburg, Pa., a scaffold falls, 4 killed. Fire: iron works burned, Newcastle, Del., estimated loss, \$300,000, 800 hands out of work.

13. Train derailed near Beaver Brook, Col., 700 passengers on board, 4 killed, 28 hurt.

14. Fires: saw mill destroyed, Condon River, Mich., estimated loss, \$200,000; several manufactories, Menasha, Wis., estimated loss, \$85,000.

15. Floods in the Spanish provinces of Toledo and Almeria drown about 2,000 persons and damage property to the amount of \$4,000,000. Fire: New York city, building of the "Commercial Advertiser" burned.

16. Fire: Portland, Me., tannery burned, estimated loss, \$25,000. Slight earthquake in Oregon. Shipwreck: 3 schooners lost off Labrador, 13 lives lost.
17. Mining accident near Virginia city, Nev., 5 killed. Fires: Memphis, Tenn., theatre burned; Hastings, Minn., factories burned.
18. Boiler explosion near Chardon, Ohio, 5 killed. Train collision near Pont Neuf, Idaho, 5 killed, 4 hurt (with one exception the casualties were trespassers). Fire: Belair, Md., factories burned.
19. Fires: a tenement house in Chicago, 6 lives lost; Lancaster, Pa., paper mill, loss, \$25,000; Needles, Cal., business houses burned, estimated loss, \$37,000. Colliery disaster in Belgium, 29 lives lost. Collision near Idaho, 5 killed, 7 hurt.
20. Train wrecked near Greensburg, Pa., 3 killed, 1 hurt. Fires: paper mill burned, Lions, Iowa, estimated loss, \$75,000 (\$30,000 insurance); hotel and stores burned, Sheffield, Ala., estimated loss, \$110,000.
21. Boat upset near Newburgh, N. Y., 5 drowned. Severe storm in Great Britain, many wrecks by land and sea.
22. Tornado in South Dakota and Minnesota, buildings and crops destroyed. Fires: hotel and buildings burned, Fort Worth, Texas, estimated loss, \$150,000 (\$22,000 insurance). Destructive prairie fires, North Dakota, crops burned.
23. Fires: basket factory and other buildings burned, Ellsworth, Wis., loss, \$72,000; knitting mills, Sand Lake, N. Y., loss, \$40,000; chemical works, Brooklyn, N. Y., loss, \$25,000. Train derailed near Plantersville, Texas, 1 killed, 5 hurt.
24. Train collision near Burgos, Spain, 14 killed, 24 hurt. Fire: Minneapolis, factory and grain elevator burned, loss, \$167,000 (insured \$117,700). Train collision near Zelinople, Pa., 8 killed, 5 hurt.
25. Explosion: Newark, N. J., a mortar bursts while firing a salute, 11 killed, 30 hurt. Fire: Savannah, Ga., store burned, loss, about \$400,000 (\$240,000 insurance).
26. Fires at Greenville, Ill., Chattanooga, Tenn., and Dallas, Texas. Forest fires in Chippewa Co., Wis.
27. Prairie fire, Minnesota, a family of 5 persons perish. Fire: factory burned, St. Louis, Mo., loss, \$50,000. Violent wind, Minnesota, numerous buildings wrecked in Beltrami and Itasca Counties. Trains in collision near Cumberland, Md., 2 killed, 1 hurt. Earthquakes of considerable violence in the North Middle States.
28. Fire: fruit works burned, Bouckville, N. Y., loss, about \$30,000. Forest fire: Eldorado County, Cal., 500 square miles burned over.
29. Train wrecked near Kent, Ohio, 4 killed, 24 hurt. Fires: lumber yards burned, Wauseon, Wis., loss, \$100,000 (insured \$50,000); cement factory, Chicago, loss, about \$50,000; Morris, Minn., grain elevator burned, with 30,000 bushels of wheat; Cincinnati, factory burned, loss, \$30,000.
- Summary of train accidents in September: 139 collisions, 92 derailments, 6 miscellaneous; total, 237. Killed: 54 employés, 6 passengers, 5 trespassers; total, 65. Hurt: 95 employés, 95 passengers, 8 trespassers; total, 193.
- October 1. Prairie fire in North Dakota, several thousand square miles burned over. Fire: woolen mill burned, Oxford, Me., loss, about \$140,000; factories burned, Chicago, loss, about \$50,000.
2. Fire: Halifax, N. S., estimated damage, \$400,000.
3. Colliery explosion, Glen Carbon, Pa., 7 men buried, 4 probably killed. Explosion: dynamite, Butte, Mont., 2 killed, several hurt.
4. Explosion: steam tug boat, Chicago, 7 killed, many injured. Fire: grain elevator burned, Baltimore, \$500,000 damage, 35,000 bushels of grain burned; Indianapolis, packing works burned, loss, \$200,000.
5. Fire: tenement house burned, New York, 4 lives lost, several injured; East Cambridge, Mass., packing house burned, loss, \$200,000.
6. Fire: Indianapolis, a wall falls from the jar of a passing train, 5 firemen buried, 3 killed; Yale University, a dormitory partly burned, loss, \$50,000. Run-
- over at grade crossing, Staten Island, N. Y., 3 killed. Severe gale in the Irish Sea, much damage to ships.
7. Fires: 2 blocks of business houses, Columbus Junction, Iowa, loss about \$150,000; Lima, Ohio, "Times" building and others, loss, \$100,000 (insured \$65,000).
8. Fire: house of August Belmont, New York, loss, about \$100,000.
9. Shipwreck: United States steamer Despatch ashore off Assateague, Md., total loss, all hands saved.
10. Railway collision near Hyde Park, N. Y., 3 killed. Fires in Nashville, Tenn., Pittsburg, Pa., Boston, and Cincinnati.
11. A wheat-laden barge sunk by collision in the Sault St.-Marie Canal, all traffic blocked for two weeks. Fires: Lynchburg, Va., bark and sugar mills burned, loss, about \$100,000; Burleysville, Me., oil-cloth factory, loss, about \$100,000.
12. Earthquake in Napa, Sonoma, and elsewhere, many buildings damaged.
13. Mining accident near Niagara, hoisting gear gives way, 3 killed, 2 hurt. Violent storm on north Atlantic coast of America and on the British Isles.
14. Explosion on United States steamer Atlanta, 6 hurt. Rain ruins several million bushels of wheat in Minnesota and Dakota. Earthquake in San Francisco. Machinery breaks in a factory at Manchester, N. H., 3 killed, several hurt. Railway accident near Crete, Ill., 4 killed. Fires: paint works, Springfield, Mass., loss, about \$60,000; Viroqua, Wis., business houses burned, loss, about \$50,000.
- 15-20. Continued and terribly destructive gales in Great Britain.
17. Fires: Binnswater, N. Y., factories and stores, loss, \$300,000; also in Frederick, Del., and Paoli, Ind.
18. Fire: coal houses burned, Norwich, Conn., loss, \$30,000.
19. Locomotive boiler bursts near Pottsville, Pa., 3 killed, 1 hurt.
20. Fire: brewery burned by tramps, New Brunswick, N. J., loss, \$50,000.
21. Railroad accident, Chicago, Burlington and Quincy Railroad, 4 killed, many hurt. Fires in Minneapolis, Amesbury, Brooklyn, St. Paul, Charleston, Ill., Louisville, Cincinnati, and New York, total losses, fully \$500,000.
22. Boiler of a thrashing machine bursts near Mayville, N. Dak., 4 killed. Fires: Greenville, Texas, Glendale, Mass., Castle Rock, Minn., Childress, Texas, and Natural Bridge, Va., losses, about \$500,000. Damage by floods in Great Britain, France, and Spain.
23. Violent storm of snow and wind along the New England coast. Fires at Mount Vernon, N. Y., Lancaster, Ky., Hot Springs, S. Dak., losses, about \$100,000.
24. Shipwreck: schooner Red Wing, off the coast of Delaware, 14 lives lost. Fires at Bowling Green, Ky., Bird's Point, Mo., and Chicago, losses, about \$200,000.
25. Fire: Meiringen, Switzerland, almost wholly destroyed.
26. Boiler bursts, Louisville, Ky., several killed, damage, \$60,000. Fire: Pine Grove, Ky., almost wholly destroyed. Collision at sea: British bark Charwood sunk by steamer Boston off Eddystone Light, 16 drowned. Train wrecked near Moirans, France, 15 killed, about 50 hurt.
27. Earthquake shocks in South Carolina. Railway collision near Thomas Station, Minn., 5 killed, 7 hurt. Defective machinery, Greenville, Pa., 2 killed, 3 hurt. Cyclone, Conneaut, Ohio, 30 buildings destroyed. Fires at Evansville, Ind., Newman, Ga., Springfield, Mass., Marshalltown, Iowa, and Forsyth, Ga., losses, about \$200,000.
28. Earthquake in Japan, estimated loss of life, 7,000 to 10,000 persons. Explosion: powder works near Youngstown, Ohio, 2 killed. Fires: Newman, Ga., loss, \$200,000; Muncie, Ind., loss, \$52,000; Virden, Manitoba, loss, \$50,000.
29. Train collision near Taopi, Minn., 3 killed. Fires: Steamboat, Oliver Bierner, near Milliken's

Band, 20 lives lost; destructive prairie fires in Southern Indiana: Newbury, Ind., almost wholly destroyed; Rice Lake, Wis., business house burned, loss, \$50,000.
 30. Land slide, Martinsville, Va., 2 killed. Fires: Clinton, N. J., 19 buildings, loss, \$100,000; Cleveland, Ohio, business and dwelling houses, loss, \$100,000; Peoria, Ill., elevator, loss, \$90,000; Loda, Ill., business houses, loss, \$75,000; Pittsburg, Pa., factories, loss, \$7,000; Brazil, Ind., factory, loss, \$40,000; Nashville, Tenn., gas works office, loss, \$35,000.

Summary of train accidents in October: 120 collisions, 91 derailments, 13 miscellaneous; total, 224. Killed: 42 employés, 13 passengers, 3 trespassers; total, 58. Hurt: 100 employés, 74 passengers, 5 trespassers; total, 179.

November 1. Fires: Sandringham Hall, England, residence of the Prince of Wales, loss, \$50,000; Beverly, Mass., freight houses, bank, factories, cars, etc., loss, \$200,000; Ellwood City, Pa., post office and business houses, loss, \$60,000; Newark, N. J., hat factory, loss, \$40,000; Carsonville, Mich., nearly destroyed; Ludington, Mich., lumber mill and warehouse burned; North Baltimore, Ohio, business houses, loss, \$20,000.

2. Fires in Macon and Albany, Ga., Martin's Ferry, Ohio, Jersey City, N. J., St. Louis, Mo., and Portland, Me. Train wrecked near Danville, Va., 1 killed, 3 hurt.

4. Hoisting gear breaks, Anaconda mine, Nevada, 17 killed. Fires in Indianapolis, Pittsburg, and Newark, total loss, \$150,000. Train wrecked near Waco, Tex., 4 killed, 1 hurt.

5. Fires in New York, Arthur's Bay, Mich., Brownsburg, Ind., losses, about \$184,000.

6. Fires: Luray, Va., hotel burned, Ashley junction, S. C., losses, about \$170,000.

7. Explosions: giant powder at Clipper Gap, Cal., 3 killed; blasting caps at Last Chance mine, Idaho, 3 killed. Fire: Orange, Mass., loss, \$200,000.

8. Explosion of gas in a mine, Nanticoke, Pa., 12 killed, 4 hurt. Lightning: Louisville, Ky., Board of Trade building struck, loss, \$50,000. Fire: Canton, Ohio, loss, \$75,000.

9. Cyclone in the Bay of Bengal: many shipwrecks at Calcutta, about 150 lives lost at the Andaman Islands.

10. Explosion: dynamite at Hayward, Wis., 10 hurt, 3 fatally.

11. Fires: Augusta, Ga., loss, \$125,000, San Antonio, Texas, loss, \$47,000, Findlay, Ohio, loss, \$40,000. Destructive storms in England. Train wrecked near Adrian, N. Y., 1 killed, 10 hurt.

12. Fires: Warsaw, N. Y.: Duluth, coal piles; Slater, Mo.; Tampa, Fla., cigar factories; London, England; total loss, about \$377,000.

13. Fires: Columbus, Ohio, 5 lives lost; Silver City, Iowa; Pittsburg, Pa.; losses, about \$175,000.

15. Fire: Cleveland, Ohio (\$200,000).

17. Destructive wind storm on the New Jersey coast. Fires: Minneapolis factories burned; Kearney, N. J.; Chattanooga, Tenn.; St. Louis, Mo., damage, nearly \$1,350,000; Brooklyn, N. Y., 72 families homeless.

18. Train wrecked near Greensburg, Pa., 3 killed. Fires: warehouses, St. Paul, estimated loss, \$950,000; onyx works, New York city, loss, \$75,000; two buildings, Pine Bluff, Ark., loss, \$45,000.

19. Fires: storehouse, Birmingham, Ala., loss, \$60,000; hotel and stores, Edgerton, Mo., loss, \$50,000; canning factory, Kansas, Ill., loss, \$40,000.

20. Explosion: steam boiler, Mentoga, Tenn., 2 killed.

21. Water conduit breaks, Brooklyn, N. Y., 4 men buried, water famine threatened.

22. Shipwrecks: two barges on Lake Michigan, 18 lives lost.

23. Tornado in Washington, 1 killed, several injured, and several buildings wrecked. Destructive storms in Virginia and Maryland. Fires: hotel, Jamestown, N. Y., 4 lives lost; business blocks in Middleburg, Vt., and two bridges, loss, \$150,000; busi-

ness houses, Paragould, Ark.; oil mills, Memphis, Tenn., loss, \$60,000.

24. Tornado in Mississippi, destruction of property. Explosion: powder mills, Sumneyton, Pa., 1 killed. Fires: shoe factory, Minneapolis, loss, \$350,000; hotel, Beverly, Mass., loss, \$30,000; public library, Masonic Hall, and stores, Elion, N. Y., loss, \$60,000. Train wrecked near Alberton, Pa., 1 killed, 5 hurt.

25. Landslide near Canton, Wash., railroad track buried, 25 or more lives said to have been lost. Fires: factories in Fremont, Ohio, loss, \$350,000; packing houses, Dallas, Texas, loss, \$200,000; hotel, Marshalltown, Iowa, loss, \$75,000.

26. Fire: church and business blocks, St. Albans, Vt., loss, \$100,000.

28. Trains wrecked: Toledo, Ohio, 9 killed, 20 hurt; near Charleston, S. C. (caused by malice). Fire: factory burned, Newark, N. J., loss, \$75,000.

29. Shipwreck: brig lost at sea with 250 persons. Fires: Lynn, Mass., loss, \$80,000; church burned, Columbus, Ga., loss, \$40,000; Escamilla, Mich., heavy loss in grain, flour, and coal. Earthquake (slight), Seattle, Wash.

30. Bridge breaks near Kalispell, Mont., 5 killed, 10 hurt. Fires: 6 blocks of buildings, Winnebago, Ill.; electric-light company, Chicago, loss, \$300,000; car sheds, St. Joseph, Mo., loss, \$70,000.

Summary of train accidents in November: 112 collisions, 110 derailments, 4 miscellaneous; total, 226. Killed: 46 employés, 17 passengers, 6 trespassers; total, 69. Hurt: 134 employés, 64 passengers, 9 trespassers; total, 207.

December 1. Bridge breaks at North Fork, Columbia river, Mont., 3 killed, 3 hurt. Fires: pottery works, North Cambridge, Mass., loss, \$45,000; rolling mills, Owatonna, Minn., loss, \$40,000.

2. Explosion: dynamite, Haverstraw, N. Y., 5 killed. Train accident near Harlem, N. Y., 2 killed, several hurt. Fires: Detroit, 5 lives lost; Dewitt, Ark., 3 lives lost; wagon works, Sterling, Ill., loss, \$100,000; paint works, Lincoln, Neb., loss, \$80,000.

3. Train wrecked near Pennington, N. J., 4 killed, 15 hurt. Fire: Plainfield, N. J., loss, \$150,000.

4. Ten barges sunk off Haverstraw, N. J., several lives lost. A falling wall kills 10 men in St. Paul. Four trains wrecked near East Thompson, Conn., 7 killed. Blizzard in the Northwest, snow blockade. Fires: cotton mills, Des Moines, Iowa, loss, \$150,000; mill at Cœur d'Alène, Idaho, with 400,000 feet of lumber; toy factory, Sheboygan, Wis.; bookbindery, Buffalo, N. Y., loss, \$38,000.

6. Explosion: fire-damp in a mine at St.-Etienne, France, about 70 killed. Fire: publishing house in Philadelphia, loss, \$200,000.

7. Shipwreck: steamer Fountain City supposed to be lost in a recent gale on the Lakes. Violent gale in the English Channel, 24 lives lost. Mining accident in Poland, killed, 180 (estimated).

8. Explosion: Buffalo, 1 killed, several hurt. Train wrecked near West Plains, Mo., 4 killed, 19 hurt. Scaffold falls, Leighton, Pa., 2 killed, 5 very badly hurt.

9. Fires: Louisville, Ky., 12 lives lost, loss, \$500,000; business houses, New Richmond, Wis., loss, about \$75,000; theatre burned, Cleveland, loss, \$75,000.

10. Fires: business section of Ardmore, Indian Territory, loss, \$100,000; Pinos Altos, New Mexico, almost burned up, only two buildings left, loss, \$100,000; buildings burned, Frankton, Ind., loss, \$40,000; business block, Williamsburg, Iowa (incendiary); hotel and printing offices burned, Dodgeville, Wis. Disastrous gales on English waters, many small vessels lost. Balloon burst at Bombay, aeronaut killed.

11. Storm on the Pacific coast, many lives lost. Fires: factory burned, Seattle, Wash., loss, \$140,000; business block, Red Key, Ind., loss, \$50,000.

12. Violent and destructive gale in southern California. Fires: mill burned, Attleborough, Mass., loss, \$40,000; rice mill, New Orleans, loss, \$40,000; large barn, Maynard, Mass., 103 cows and 5 horses burned.

13. Fire: business house burned, Cincinnati, loss, \$30,000. Renewed storms in Great Britain.

14. Fires: business section of Oaks, N. Dak., 1 life lost; 7 oil tanks, Bridgeton, N. J., 1 life lost; 8 buildings, Centralia, Pa., several persons injured in a rush. Shipwreck: ship Enterkin lost off English coast, 30 drowned.

16. Train wrecked near Pittsburg, 4 killed, many hurt. By other train accidents, 3 killed, 5 hurt. Fires: mill burned, Riverside, N. J., loss, \$60,000; factories burned, Lebanon, Mo., loss, \$50,000; business houses, Vermilion, Ohio, loss, \$25,000. Shipwreck: steamer Prince Soltykoff sunk off Brest, 1 survivor.

17. Fires: mill, Burrillville, R. I., loss, \$85,000; store, La Crosse, Wis., loss, \$40,000; factory, Aurora, Ill., loss, \$30,000; tin factory, Laurel Hill, N. Y., loss, \$75,000.

18. Earthquake: violent shocks in Sicily. Fire: steamer Abyssinia burned at sea, all hands rescued by German steamer Spree.

19. Fires: buildings burned, Croton Landing, N. Y., loss, \$50,000; hotel, Needham, Mass., loss, \$50,000.

20. Fires: nearly half of Truckee, Cal., burned, loss, \$50,000. Famine officially recognized in 12 provinces in Russia.

22. Shipwrecks: steamer wrecked at Punta Arena, Cal., 9 drowned. Snow storm in Italy, 15 lives lost. Fire: business block, Hutchinson, Kan., loss, \$140,000.

23. Fires: scale factory, New York city, loss, \$115,000; potteries, Trenton, N. J., loss, \$100,000; mills, Detroit, Mich., loss, \$150,000 (insured \$30,000); warehouse, Sacramento, Cal., loss, \$90,000; dye house, Providence, R. I., loss, \$50,000; hotel, Quincy, Ill., loss, \$100,000; total for the day, \$605,000. Explosion: dynamite on board a French lugger at Antwerp, 2 killed.

24. Train wrecked, near Hastings, N. Y., 15 killed, 7 hurt.

22-25. Dense fog in England, traffic generally suspended.

26. Fires: insane asylum, Pontiac, Mich., inmates saved: Chattanooga, Tenn., loss, \$500,000.

27. Panic caused by alarm of fire in a theatre in Gateshead, England, 10 killed, many hurt. Shoe houses, Boston, burned, loss, \$450,000.

28. Fires: cotton in cars, St. Louis, loss, \$50,000; factory, Maspeth, L. I., loss, \$40,000.

Summary of train accidents in December: 125 collisions, 101 derailments, 8 miscellaneous; total, 232. Killed: 62 employes, 17 passengers, 6 trespassers; total, 172. Hurt: 157 employes, 8 passengers, 2 trespassers; total, 331.

Summary of train accidents for 1891: 1,137 collisions, 1,206 derailments, 103 miscellaneous; total, 2,446. Killed: 550 employes, 177 passengers, 63 trespassers; total, 790. Hurt: 1,447 employes, 1,183 passengers, 56 trespassers; total, 2,686.

DISCIPLES OF CHRIST. The meetings in connection with the General Christian Missionary Convention were held at Allegheny City, Pa., Oct. 17 to 21. The receipts for the year for home-mission work had been \$37,413. Sixty-one missionaries had been employed, under whose labors 82 new places had been visited, 26 new churches organized, and 1,287 conversions reported. The reports of the work of the State organizations, which is additional to that of the General Convention but co-operative with it, had not yet been made up for the year; but the summaries for the year ending Dec. 1, 1890, showed that it included in that year \$147,142 contributed by State and district boards and mission stations, \$140,193 of pledges for local and future work, and the whole or part time labors of 309 evangelists, by whom 255 new and unorganized places were visited, 142 churches

and 206 Sunday schools were organized, and 8,907 conversions were reported. The receipts for Church extension had been \$18,289, or \$2,097 more than in 1890. A fund of \$105,413 had been accumulated for this work. Reports were made of the progress of negro evangelization, from which it appeared that there were now 25,000 negro members among the disciples. The Foreign Christian Missionary Society had received \$62,619 and expended \$67,555, drawing upon the surplus from the previous year to make up for the deficiency in receipts. From the mission fields were returned 41 members in China, 245 in Japan, 51 in India, and 659 in Turkey; with, in all these fields together, 1,541 pupils in Sunday schools and 822 in day schools; 22 native helpers in India and 8 in Turkey; and a dispensary, orphanage, and book shop in connection with the Indian mission. In Denmark there were 141 members, with 120 pupils in Sunday schools; and in England, at Southampton, Fulham, Cheltenham, and Birkenhead, 589 members and 772 in Sunday schools. The Christian Women's Board of Missions had received during the year \$43,134. This board had in seventeen years contributed \$243,000 for missions.

DOMINION OF CANADA. The historical events of Canada in 1891 were somewhat momentous.

The Census of the Dominion, taken in common with that of the rest of the British Empire, simultaneously, in 1891, presented some peculiar incidents, owing to the extent and character of the country. Under the *de jure* system adopted, the staff of enumerators numbered only about 4,300 persons, who had to traverse the immense area of Canada by every imaginable mode of locomotion. A steamer with enumerators on board went in and out the deep indents of the Pacific coast-line as far as Alaska, and thence to Queen Charlotte Islands, to enumerate the people. Pack-horses were required in the mountain regions of British Columbia to carry the enumerators and their portfolios through the valleys among the "sea of mountains." Dog trains were a necessity in the Saskatchewan country. To obtain the population on the northern slope of the "Height of Land" in Ontario and Quebec, a canoe expedition set out from the head waters of the Lievre river, to go by lake and river portages to Albany river, at James's Bay. Camping outfits and canoes were requisite to enable the enumerators to take the population in the Nipissing district, just beyond the "Height of Land." The enumerators in Manitoba had now to foot it, now to go by buck-board, and now by boat; and, in one instance, the man, losing himself, could only save his own life by killing and eating his horse. Many townships in Algoma had to be taken by slow and toilsome pedestrianism. For the north shore of the Gulf of St. Lawrence a schooner was chartered, the enumerators put on board, and dropped at different points until the Straits of Belle Isle were reached, from which point the schooner was directed to the Isle of Anticosti, the census of which having been taken, she returned to the straits and sailed along the coast of Labrador, picking up the enumerators and returning to the mouth of the Saguenay.

PROVINCES.	1871.	1881.	Increase.	Percentage.	1891.	Increase.	Percentage.
<i>Eastern—Maritime.</i>							
New Scotia.....	887,800	440,572	52,772	18.61	450,523	9,951	2.25
New Brunswick.....	285,794	321,233	35,639	12.44	321,234	61	0.02
Prince Edward's Island.....	94,021	108,891	14,870	17.19	109,085	197	0.18
Totals for the group.....	767,415	870,696	108,281	18.45	880,843	10,209	1.17
<i>St. Lawrence River.</i>							
Quebec.....	1,191,516	1,859,027	167,511	14.05	1,488,586	129,559	9.73
Ontario.....	1,620,851	1,926,922	306,071	18.88	2,112,980	186,067	9.43
Totals for the group.....	2,812,367	3,285,949	478,582	16.88	3,601,575	315,626	9.60
<i>Western.</i>							
Manitoba.....	25,228	62,260	37,032	146.78	154,442	92,182	148.06
Assiniboia.....							
Alberta.....	18,000	25,515	7,515	41.75	67,554	42,039	164.76
Saskatchewan.....							
British Columbia.....	33,586	49,459	15,873	47.26	92,767	43,308	87.56
Unorganized.....	30,000	30,981	981	3.30	82,169	1,237	4.00
Totals for the group.....	106,814	168,165	61,351	57.48	346,981	178,766	106.80
Total population.....	3,656,596	4,324,510	668,214	17.81	4,329,411	504,601	11.66

The result shows that, as in the United States and in other countries, there has been within the past decade a marked gravitation of population from the rural to the urban districts, a fact which mainly accounts for the actual decrease of population in some of the census districts. Thus, while the total population of the Dominion shows an increase during the decade 1881-'91 of 11.66 per cent., the urban population has been as follows: Cities and towns having over 5,000 inhabitants, 40.8 per cent.; over 3,000, 44.9 per cent.; over 1,500, 20.3 per cent. The above table is a statement of the population of Canada for 1871, 1881, and 1891, by provinces.

A parliamentary general election was held on March 5. The result, in brief, was that the existing ministry was sustained at the polls by a majority not notably less than that which had sustained them in the last House of Commons. On April 29, this, the seventh Parliament of Canada, met in its first session, Hon. Peter White having been elected Speaker, and was formally opened by His Excellency Lord Stanley of Preston, Governor-General, with the following speech:

Honorable Gentlemen of the Senate: Gentlemen of the House of Commons: I am glad to welcome you to the duties of the first session of a new Parliament, which I hope will be memorable for wise deliberations and for measures adapted to the progress and development of the Dominion.

The season in which you are assembled has opened auspiciously for the industries of our people. Let us hope that their labors may be crowned with fruitful returns from land and sea, and that the great resources of Canada may continue to reward the toil and enterprise of its inhabitants.

My advisers, availing themselves of opportunities which were presented in the closing months of last year, caused the Administration of the United States to be reminded of the willingness of the Government of Canada to join in making efforts for the extension and development of the trade between the republic and the Dominion, as well as for the friendly adjustment of those matters of an international character which remain unsettled. I am pleased to say that these representations have resulted in an assurance that, in October next, the Government of the United States will be prepared to enter on a conference to consider the best means of arriving at a practical solution of these important questions. The papers relating to this subject will be laid before you.

Under these circumstances, and in the hope that the proposed conference may result in arrangements beneficial to both countries, you will be called upon to consider the expediency of extending, for the present season, the principal provisions of the protocol annexed to the Washington treaty, 1888, known as the *Modus Vivendi*.

A disposition having been manifested in the United Kingdom to impose on sea-going ships engaged in the cattle trade increased safeguards for life and greater restrictions against improper treatment, a careful inquiry has been made as to the incidents of that trade in so far as this country is concerned. The evidence elicited on this inquiry will be laid before you. While I am glad to learn that our shipping is free from reproach in that regard, your attention will be invited to a measure which will remove all reasonable apprehensions of abuses arising in the future in connection with so important a branch of our commerce.

The early coming into force of the Imperial Statute relating to the vice-admiralty courts of the Empire has made it necessary to revise the laws in force in Canada respecting our courts of maritime jurisdiction, and a measure will therefore be laid before you designed to reorganize those tribunals.

A code of criminal law has been prepared, in order that this branch of our jurisprudence may be simplified and improved, to which your best attention is invited.

Measures relating to the foreshores of the Dominion and to the obstruction of its navigable waters will be submitted to you; and you will also be asked to consider amendments to the acts relating to the Northwest Territories, to the Exchequer Court act, and to the acts relating to trade marks.

Gentlemen of the House of Commons: The accounts for the past year will be submitted to you. The revenue, after providing for the services to which you appropriated it, has left a surplus for the works which you designed to be carried on by capital expenditure.

The estimates for the coming year will be laid before you at an early date.

Honorable Gentlemen of the Senate: Gentlemen of the House of Commons: I pray that, in the consideration of these matters and in the performance of all the labors which will devolve on you, your deliberations may be divinely aided, and that your wisdom and patriotism may enlarge the prosperity of the Dominion and promote in every way the well-being of its people.

Death of the Premier.—The measures foreshadowed in the viceregal speech received eventually their due attention but the more important practical legislation of the session was, in the main, suspended through the sudden illness

and speedy decease of the Premier, Sir John Alexander Macdonald, on the 6th of June. After the ex-minister's obsequies, the Hon. Senator J. J. C. Abbot was called upon by the Governor-General to form a new Government, as, according to British usage, all ministers resign upon the death or resignation of the Premier. Mr. Abbot invited the ex-ministers to resume their several portfolios, which was done, and the work of legislation was resumed. There was the usual annual protracted debate upon prohibition of the manufacture and sale of intoxicating liquors, terminating in the adoption of a ministerial motion to appoint a royal commission to inquire, during the recess, into the results of the liquor traffic. In the course of his budget speech, the Finance Minister remarked:

With reference to the foreign trade for the year 1889-'90, I may say that the aggregate trade was some \$14,000,000 in excess of that of the preceding year, and marked one of the best years in the history of the confederation, being some \$65,000,000 in excess of the trade in 1878-'79, the last year of the Administration which preceded the present Government. The exports for the last year under review were \$7,500,000 more than they were in the year 1888-'89, and some \$25,000,000 in advance of the exports for the year 1878-'79. There was a gratifying increase of the trade between Canada and Great Britain of \$7,000,000 over and above the year 1888-'89, and our trade increased to a greater or lesser degree with France, Germany, Portugal, Italy, Holland, Belgium, China, Japan, and Switzerland. There was a decrease of about \$1,000,000 in our trade with the United States of America, a slight decrease in our trade with Spain, and somewhat larger with Newfoundland and with South America and the West Indies. . . . Our interprovincial trade, which year by year has been becoming more and more a factor and an incident of our development, has its steady increase; and, although we have not at hand an unerring means of denoting by statistical records what the exact increase in the volume of this trade is, yet from certain large indications that we get we are assured that it is a constantly increasing factor, and that it carries with it all that increased energy and life and prosperity which come from such a branch of industry.

After referring to the large increase in railway traffic and in mining activity during the year, Mr. Foster went on to say:

I think we can congratulate ourselves upon the buoyant nature of the revenue of the past financial year—a revenue the largest in the history of this country—a revenue which did not come from increased taxation as a result of charges and additions to the tariff, but which is an evidence of the power of the people to buy, and consequently marks, to a certain extent, their prosperity and the soundness of their financial condition. . . . Taking, then, into consideration the fact that the revenue gave more than I anticipated, that the actual expenditure fell below the receipts, I am able to say to the House that, on Consolidated fund account, after all the services for which appropriations have been made had been taken care of by the Government, there remains a surplus of \$3,885,893 over the ordinary receipts. That is not, however, to say that we have that sum of \$3,885,893 actually in pocket. There are capital expenditures as follows: Railways and canals, \$3,419,132; on public works, \$495,421; Dominion lands, \$133,832; Northwest Rebellion claims, \$47,000; to which, if we add the railway subsidies, \$1,319,500, and the transfer of the Cobourg debentures, \$44,496, we have a total capital expenditure of \$5,776,301. So that the account as a whole of expenditure and income comes in this way: That we took care of the ordinary expenses of the country out of the Consolidated fund;

that we laid up in the sinking fund against our debt and for the reduction of our debt \$1,779,237; and had a surplus of \$3,885,893, which we placed over against a capital expense, and came out at the end with an increase of debt of only \$3,170.

No general revision of the tariff was proposed, but the duty on sugar, amounting to about \$3,500,000 annually, was wholly swept away. On the other hand, small additional duties were imposed upon malt and malt liquors, spirits, and tobacco, and a few other articles.

Frauds Discovered.—The principal cause of the session's being protracted to an inordinate length was the startling discovery of alleged frauds on the part of certain public officials, and of other persons associated therein with departmental officers. This led to a long and thorough investigation before a large committee of the House, in which both Ministerialists and Oppositionists, as a rule, obviously used their best efforts to unearth the suspicious facts and to fix the blame where it belonged. The more startling and momentous of the transactions in question occurred in connection with the Board of Works Department, and, in a minor degree, with the Department of the Interior. It was maintained by those who assumed the part of prosecutors that certain contractors and would-be contractors had glaringly used bribery and other corrupt schemes in their relations with department officials in order to secure Government contracts and to enable them to "scamp" their work with impunity when contracts were thus obtained. In other instances it was declared that departmental subordinates had themselves boldly swindled the Government which they professed to serve by procuring contracts and Government favors in the names of friends who were willing to become their accomplices. It was maintained in certain quarters that these fraudulent proceedings had reached such proportions and had arrived at such a degree of effrontery that even some of the ministers themselves could not have been unaware of the frauds; that at least, if they did not connive at these proceedings, they were highly censurable for their lack of vigilance and general remissness in the discharge of their duties. At least one member of the House of Commons was implicated in these charges. Early in the course of the investigations referred to there was a flutter among the parties implicated. As revelations were evolved numbers of departmental officials were requested to resign. Others did not wait for the request. Several of them have judiciously gone to parts unknown. Meanwhile one member of the House of Commons was, on motion of the Minister of Justice, expelled the House, and a writ was issued for a special election to choose his successor.

While the investigation was still going on the Minister of Public Works thought it wise to resign his portfolio, although at the close of the committee's proceedings the majority report exonerated that gentlemen (Hon. Sir Hector Langevin) from all knowledge of or part in the reprehensible transactions in which some of his subordinates figured. The minority report of the committee in question declined to accede to that of the majority on this point. The vote was a strictly party one. Legal proceedings

have been instituted by governmental direction against several of the more prominent of the imputed for conspiracy, fraud, embezzlement, getting money under false pretenses, and similar charges, and have been prosecuted with vigour. As an important result of this commotion, one of the earliest acts of the new Premier, Mr. Abbott, was to move for the appointment of a royal commission to examine thoroughly and report upon the whole subject and the working of the Canadian civil service. The commission has been appointed, the four members of which are regarded with general commendation, and they entered upon their labors in the last week of November. The commissioners—George Hague, manager of the Merchants' Bank; Judge Barbridge, E. Barbeau, and J. M. Courtney, deputy Minister of Finance, with J. H. Flock, barrister, of London, as secretary—are to examine into the condition of the civil service in Ottawa, and consider suggestions from experienced persons as to the best method of correcting irregularities. It is understood that the instructions to the commissioners will empower them to inquire into and report upon the matter of appointments, promotions, discipline, and duties, including hours and extent of service and absence, salaries, and superannuation of members of the service. The investigation will cover all the departments, as well as the staff of the Senate and House of Commons. The commissioners are given power to summon witnesses. The parliamentary session closed on the 30th of September, and was the longest on the records of the Dominion.

Navigation.—In the registered tonnage of its mercantile marine the Dominion, taken separately, still retains its position as the third country in the world. It is surpassed in this respect only by the United Kingdom and the German Empire, Norway coming next as owner of shipping.

Fisheries.—The value of the product of the fisheries of Canada, by provinces, for the year

ending Dec. 31, 1890, was as follow: Nova Scotia, \$6,636,445; New Brunswick, \$2,609,055; Quebec, \$1,615,120; Prince Edward Island, \$1,041,109; Ontario, \$2,009,637; British Columbia, \$3,481,432; Manitoba and Northwest Territories, \$232,104; total, \$17,714,902, against \$17,655,256 in the preceding year. The total number of vessels and boats employed in the fisheries in 1890 was 30,872, valued at \$3,077,136; of men engaged in this industry, 63,725; of nets, 5,541,285 fathoms, valued at \$1,695,358. The other fishing material was valued at \$2,600,147.

Railways.—The Dominion Government has expended \$139,745,691 in the form of bonuses, at different times, to different railways, down to the close of 1890, which sum represents a considerable portion of the public debt, and is directly productive to the country at large, although it brings in no immediate return to the Government. In addition to this sum paid by the Dominion Government, subsidies of Dominion lands—principally to lines in Manitoba and the Northwest Territories—have been granted at various times, amounting altogether, down to the close of 1890, to 46,409,433 acres. If these lands are placed at the lowest estimate, \$2 an acre, they represent a sum amounting to \$93,998,866; if valued at the present valuation placed on their unsold lands by the Canadian Pacific Railway Company, based on an average of the sales of 1889 and 1890, \$3.57 an acre, they would represent a sum of \$166,002,965. In 1890, the paid-up capital that had been invested in railways amounted to \$786,447,812. The progress of Canadian railroad construction is briefly shown by the following figures: 1840, 16 miles in operation; 1850, 71; 1860, 2,087; 1870, 2,497; 1880, 6,891; 1890, 13,256; and in 1891, 14,320.

Crops.—In anticipation of the completion of the statistical returns relative to the agricultural harvest of 1891, it can only be said that, taking the Dominion throughout, the product for that year was considerably in excess of that of every preceding year.

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EARTH, AREA AND POPULATION OF THE. In 1866 Dr. Ernst Behm estimated the population of the earth at 1,350,000,000. This calculation was revised from time to time in accordance with newer statistics and estimates of geographers and travelers. In 1872 Dr. Behm, in conjunction with Dr. Hermann Wagner, who is now Professor of Geography at Göttingen, published a critical analysis and compilation of the available statistics of the area and population of all countries and continents as a supplement to "Petermann's Mittheilungen," of which Dr. Behm was editor. New issues of their "Bevölkerung der Erde," in which all the figures were brought down to date, were published at intervals of about two years, till 1882. Dr. Behm died while the eighth issue was in preparation, and it was not completed, because Prof. Wagner was not able to do the work alone. In the sixth issue (Gotha, 1880) the estimate of the world's population was 1,456,000,000. The population

of China was estimated at 405,000,000. Later investigations showed that this was an excessive estimate, and when the seventh issue appeared it was reduced to 350,000,000. The difference was partly offset by higher estimates of the population of some other countries, the total population of the earth footing up 1,434,000,000. In 1886-'87 Prof. Levasseur published a collection of statistics of the area and population of the earth in the "Bulletin" of the International Statistical Institute. He made the total population 1,483,000,000. In 1891 the geographical establishment of Justus Perthes issued an eighth edition of the "Bevölkerung der Erde," Prof. Wagner, who has worked up the figures for Europe and Asia, having found a coadjutor in Dr. A. Supan, the present editor of "Petermann's Mittheilungen," who looked after the sections dealing with Africa, America, Australia, Oceania, and the polar regions. In regard to countries that have no censuses, such as Turkey in

Europe and Asia and most of the countries of Asia and Africa, Dr. Supan has instituted special investigations. The varying estimates of the population of China and of the less known parts of Africa, which are little better than guesses, are the chief cause of the divergence between the computations of the world's population made by different authorities. The vagueness of the data relating to those and other regions makes it impossible to determine the total for the whole world within 50,000,000 or possibly 100,000,000. Levasseur, who in 1886 reckoned the earth's inhabitants at 3,000,000 more than Wagner and Supan in 1891, took higher estimates both for China and for Africa. Mr. Ravenstein, in his essay on "Lands of the Globe still available for European Settlement," printed a short time before Wagner and Supan published their results, accepted a lower estimate of the population of Africa than theirs by 30,000,000, and made the world's population 12,000,000 less than their total. The apparent growth of the world's population between 1866, when Dr. Behm made his first computation, and 1880, when the sixth edition of the "Bevölkerung der Erde" was issued, was 106,000,000. This was due rather to more accurate information, which led the editor to take higher estimates of the population of many countries. Two years later, while they reduced the estimate for China by 55,000,000, they added 33,000,000 to the figures for the rest of the world. Deducting the excess credited to China in 1880, the population of the earth, according to the tables of Behm and Wagner, was 1,401,000,000 in that year. In 1891 the estimate of 350,000,000 for China proper is retained, though that of Sir Richard Temple is about 68,000,000 less. The estimate for the continent of Africa has been reduced by 38,000,000, and 15,000,000 have been deducted from the total for Asia. Deductions have been made also from the former estimates for Arabia and some other regions. On the other hand, explorations have afforded data for estimating the population of countries that were left out in former calculations, or for increasing the former estimates, and natural growth has made the figures higher in countries that have precise statistics. The apparent increase since 1880, taking the subsequently corrected figures for China, has been 79,000,000. The estimate for 1891 is 56,000,000 higher than the one arrived at in 1882. There are still regions of wide extent which Wagner and Supan leave out of their calculations, because they have no data for an approximate estimate of the population. Such are the Niger Protectorate of Great Britain and the British East Africa Company's sphere. Houtum-Schindler's estimate of 7,653,000 for Persia, which was accepted by Wagner in 1882 and is still retained, is more than a million less than competent authorities have more recently credited that country with now having. Corea is credited with 10,500,000 by Wagner and Supan, who have reduced the population of Arabia to 3,472,000, less than a third of Rashid Bey's estimate of 10,725,000 made in 1875. Africa was believed a few years ago to have at least 220,000,000 inhabitants. This estimate has been reduced by Supan to 164,000,000, and Ravenstein cuts it down to 134,000,000. In 1880 there were data based on actual enumerations

and censuses for 626,000,000 out of the total of 1,401,000,000, or 44 per cent. of the estimated population of the world. Since then exact enumerations have been substituted for vague estimates in regard to 99,000,000, making 836,000,000 out of 1,480,000,000, or between 56 and 57 per cent. of the population of the earth, that can be calculated by means of precise data, although this includes the 103,000,000 of the Russian Empire, where a general census in the modern sense has only been taken in one or two provinces.

The area assigned to continents by various geographers differs not only on account of differences in the measurements, but because authors differ with regard to boundaries. Dr. Wagner, in giving the area of Europe, excludes the Canaries, Madeira, the Azores, and the Marmora Islands, as well as the polar and Atlantic islands and Iceland; that given for Asia is without the Arctic islands, and that of Africa does not include Madagascar and other islands, but in the area given for Australia is counted that of Tasmania. The area assigned to America does not include the polar regions. The area of Europe as given by Dr. Wagner varies only a few hundred square miles, within the same limits, from the results reached by Strelbitsky, who has spent years in measurements and calculations. The area of Europe in the narrowest natural limits, making the eastern boundary follow the crest of the Urals, the Manytch river, and the northern slope of the Caucasus, would be 3,570,030 square miles. Drawing the line along the Ural crest, the Ural river, and the crest of the Caucasus, the area is 3,790,504 square miles. This is the boundary accepted by Strelbitsky, who includes, moreover, Iceland and Nova Zembla, making the total 3,866,605 square miles. New calculations for the area of Asia have been made for Wagner and Supan's work by B. Trognitz, who makes it 167,570 square miles less than the previously accepted estimate. The results of Wagner and Supan's calculations of the area and population of the grand divisions of the earth's surface are as follow:

GRAND DIVISIONS.	Square miles.	Population.
Europe	3,756,860	357,370,000
Asia	17,580,686	825,954,000
Africa	11,277,864	163,958,000
America	14,801,402	121,718,000
Australia	2,991,442	3,230,000
Oceanic islands	783,120	7,420,000
Polar regions	1,780,810	80,400
Total	52,821,654	1,479,722,400

According to these estimates, the density of population, ranging from 16 to the square mile in Norway and Finland up to 365 in Holland, 480 in England, and 530 in Belgium, averages 94 to the square mile for the whole of Europe. In Asia the mean density is 47 to the square mile, in Africa it is 14, in the two Americas, not including the almost uninhabited Arctic regions, there is an average of 8 persons to each square mile, and the islands of both oceans have an average of 10, while the island and continent of Australia averages scarcely more than 1 inhabitant to every square mile of surface.

EAST AFRICA. Some of the enthusiasts who conceived the idea of founding a German colonial empire that would afford a market for German manufactures and divert emigration from the United States schemed to bring under German dominion the region of the great lakes in East Africa, where there are healthful and productive countries suitable for European colonization, and where a flourishing commerce already existed. The Sultan of Zanzibar exercised sovereignty along the coast, where all the harbors were held by him, and his officers collected duties on all goods passing through. In the interior he had armed forces at certain posts on the trade routes and furnished escorts to caravans. In 1885 the German East Africa Company obtained an imperial charter after having, through Dr. Peters, Count Pfeil, and other emissaries, made treaties of protection with native chiefs ruling over countries between the coast and the lakes. North of the lakes the Germans hoped to acquire the Equatorial Province, which Emin Pasha continued to administer after it was abandoned by Egypt. The company founded several stations, and began planting and trading in the coast region. The quasi-protection formerly exercised by Great Britain over the Sultan of Zanzibar having been relinquished, a lease was executed in April, 1888, by which the Sultan ceded to the German company for fifty years the customs and administration of the harbors and the strip of coast over which he exercised sovereignty as far north as Wanga, thus giving the Germans control of all the caravan routes. The English were chiefly anxious at that time to induce the Germans to give up the territorial rights they had acquired in Zululand and restrict their expansion on the west coast, where established British commercial interests were threatened. Subsequently the British Government determined to acquire a foothold on the east coast, in order to establish a presumptive claim to the region of the upper Nile and compete for the possession of the lake region. In 1886 the German and British governments came to an agreement, delimiting their spheres of influence. The Sultan of Zanzibar was recognized as the sovereign of a strip of coast 10 miles in width, extending from Cape Delgado, the northern limit of the Portuguese possessions in the south, to Kipini, on the Ozi river in the north, and north of Kipini, of the points where he had garrisons, viz., Lamu, Kismayu, Brava, Merka, Magadosho, and Warsheik. The German sphere of influence embraced the interior from the river Rovuma in the south to the Umba in the north, and the English sphere took in the whole country north of the Umba except the strip belonging to Zanzibar. A British East Africa Company, established by Sir William Mackinnon, obtained, on Sept. 3, 1888, a royal charter granting the privilege of administering and exploiting the British sphere. The British company acquired from the Sultan of Zanzibar the cession for fifty years of the coast and harbors and the right to collect customs from the Umba to Kipini. In 1889 the Sultan ceded also his ports north of Kipini and the islands of Lamu, Manda, and Patta. The sultanate of Vitu was claimed by Germany by virtue of a protectorate accepted by its sultan, while the English asserted that it was subject to

the Sultan of Zanzibar, and therefore was included in his cession to them. On July 1, 1890, a more complete treaty was made between Great Britain and Germany for the settlement of all territorial questions in Africa. Germany obtained from the Sultan of Zanzibar the absolute cession of the coast within the limits of the German sphere in return for a payment of 4,000,000 marks. Germany agreed to pay the further sum of 6,000,000 marks for the indemnification of private sufferers from bombardment and other operations in suppressing the insurrection in German East Africa, mostly Indian subjects of Great Britain. England renounced claims advanced to the shores of Tanganyika and the country between that lake and the Victoria Nyanza, and recognized the German sphere as extending to the bounds of the Congo Free State, and allowed the line of demarkation to be drawn from the Umba or Tana river northwestward, with a deflection to include the whole of Mount Kilimandjaro in the German sphere, till it strikes Victoria Nyanza in latitude 1° south. West of the lake it follows the first parallel till it comes to Mpororo, where an indentation is made to include Mount Mfumbiro in the British sphere. By this arrangement Germany gave up her pretensions to Uganda and to Emin's province, and agreed further to hand over Vitu to the British company, to renounce all claims to the port of Lamu and the islands of Manda and Patta, and to acknowledge an English protectorate over the dominions of the Sultan of Zanzibar, now reduced to the islands of Zanzibar and Pemba. When this protectorate was declared the northern ports of Kismayu, Brava, Merka, Magadosho, Warsheik, and Maroti were transferred to Italy, which declared a protectorate over the sultanate of Obbia in February, 1889, over the Somali coast northward as far as $8^{\circ} 3'$ of north latitude in the April following, and in November over the Benadir coast from Obbia southward to the limit of the British East Africa Company's territory at the river Jub. In 1891 England recognized the part of Somaliland as lying within the Italian sphere of interest. A full cession of its part of the Zanzibar coast and of the leased islands was obtained from the Sultan of Zanzibar by the Imperial British East Africa Company.

British East Africa.—The territory of the British East Africa Company is conterminous with German East Africa in the south, following the line that runs northwestward from the mouth of the Umba to the shore of Lake Victoria, and, crossing the lake, extends westward to the border of the Congo State, which forms the western boundary. The boundary between the British and Italian spheres of influence follows the left bank of the Jub river in a northwesterly direction up to 8° of north latitude, and thence extends westward along the borders of Gallaland and Abyssinia to the western watershed of the Nile. Thus, the region of the White and Blue Nile, including the Equatorial Province and parts of Kordofan and Darfur, which are still nominally subject to Egypt, is claimed and conceded by Germany to lie within the British sphere, which embraces further a great part of Somaliland, Usogo, Uganda, Unyoro, Gamaragara, Toro, Ankori, Mpororo, a part of Ruanda, Singo,

Buera, and Koki. The total area is estimated to be more than 1,000,000 square miles.

The Imperial British East Africa Company, which is empowered to govern and exploit these countries after the fashion of the old East India Company, has a capital of £2,000,000, of which £1,000,000 was subscribed by the public. Sir William Mackinnon is its president. The operations of the company were confined at first to the coast region. The harbor at Mombasa was improved and the town largely rebuilt in the modern style. The customs duties in 1888 were \$36,000, and in 1889 \$56,000. In 1890 the collections in the southern ports alone, exclusive of those ceded to Italy, were expected to amount to \$96,000. The trade is mainly in the hands of Banyan merchants from British India, many of whom have migrated from the German to the English part of the coast. The imports are cotton goods, iron and copper wire, and beads. The chief exports are cloves, ivory, sesame, gum arabic, copra, orchilla weed, coir, and hides. The company has a body of 300 Soudanese soldiers, many of whom served with Emin Pasha in the Equatorial Province, and 200 Sikhs from India, in addition to a large force of native levies, all trained and commanded by English officers. A railroad from Mombasa to Lake Victoria Nyanza, a distance of 450 miles, has been surveyed and construction begun, and along the route a line of forts is being built. Gen. Sir Francis de Winton, the chief administrator, has his seat of government at Mombasa. A permanent post has been established at Machakos, situated on a healthful plateau, 250 miles from the coast, and another at Mengo, the capital of Uganda.

Punitive Expedition to Vitu.—In September, 1890, after the transfer of Vitu to England, the natives rose against the Europeans and massacred nine Germans. Sir E. R. Fremantle, the British naval commander at Zanzibar, conducted an expedition to punish the Sultan and people of Vitu for these murders. A force of sailors and marines was landed at Kipini. After several skirmishes the main body of the Sultan's forces was routed on Oct. 28. The blue-jackets entered the deserted town and destroyed every building with fire or dynamite. The Sultan, Fumo Bakari, who was responsible for some of the murders, was deposed, and Fumo Omaree was declared Sultan in his stead. G. S. MacKenzie, director of the British East Africa Company and Consul Berkeley proceeded to Gongani, in the center of Vitu, whither the inhabitants of the city had fled, and there concluded a treaty with the chiefs and notables, who handed over the administration to the company's officials and agreed to the abolition of slavery, masters employing slave labor in cultivating plantations being allowed five years of grace, at the end of which, on May 24, 1891, all slaves shall be emancipated.

Zanzibar.—The sultanate of Zanzibar, comprising the island of Zanzibar, having an area of 625 square miles, and that of Pemba, 360 square miles, was proclaimed a British protectorate in accordance with the Anglo-German treaty signed at Berlin, July 1, 1890. The population of the city of Zanzibar is about 100,000, that of the rest of the island 25,000, and of

Pemba 40,000. The city has been the center of the export and import trade of East Africa, but now divides the business with the ports on the German coast. The exports were formerly \$4,000,000 a year and the imports from \$5,000,000 to \$6,000,000. Cloves are cultivated on the islands. The present Sultan or Seyyid, Ali bin Said bin Sultan, born in 1855, a brother of the late Seyyid Khalife and his predecessor Burghash, came to the throne in February, 1890. The sultans while they were independent ruled as absolute monarchs. In September, 1891, Gerald Portal, the English resident, induced the Sultan to reorganize the system of government, accepting a fixed sum as a civil list and appointing ministers who should act on the advice of the British consul-general, without whose consent no item in the budget can be altered. The Sultan's army and police were placed under the command of English officers and the harbor and the light-houses were handed over to the administration of Englishmen.

Uganda.—The most powerful of the native states in East Africa is Uganda or Buganda, occupying the northern shore of Victoria Nyanza. The area of the kingdom proper is 20,000 square miles. Beyond the Somerset Nile are Usoga and other vassal states, and others west of the Nyanza swell the area to more than 70,000 square miles. The ruling class are the Wahuma, a conquering tribe of Galla origin. The mass of the population, estimated at from 3,000,000 to 5,000,000, are of the negroid stock of Central Africa, speaking a language of the Bantu class. The country has been the scene of fierce war originating in the rival teachings of Mohammedanism and Christianity, and latterly the competition between French Catholic and British Protestant missionaries has led to civil war. Having a developed agricultural and pastoral industry and communications with the Congo valley, the Tanganyika region, the Nile countries, and the Zanzibar coast, Uganda has always been a central distributing point for the slave and ivory trade. Mtesa, a subtle and strong ruler, welcomed missionaries, and at one time nominally embraced Christianity, and at another Mohammedanism. Propagandists of both creeds were encouraged, and Protestant missionaries were invited to enter the field in competition with the French priests. Thus enlightenment and civilization displaced heathen savagery, and at the same time religious animosities were awakened between different schools of young reformers. He died in 1884, and his son and successor, Mwanga, likewise had both Christian and Mohammedan advisers, but reverted to paganism and older methods of rule and planned to get rid of both classes of reformers. The consequence was that they united and deposed him, placing his elder brother, Kiwewa, on the throne. He was inclined to Christianity and progress until the Germans occupied the east coast, when the King fell under the influence of the Arabs and Swaheli. He placed Christians of both creeds and Mohammedans in the chief offices and in command of the troops, but when the Arabs convinced the King and the people that the presence of white missionaries, more of whom were on the way, would lead to the subjugation of the country by the Germans and English and the suppression of

slavery, he consented to the expulsion of all the Protestant and Catholic missionaries in October, 1888. The Christians fled to the country of the Wasongora and to the islands of the lake. The heathen vassals of Uganda with whom they allied themselves had all the boats, and Mwanga turned to the missionaries and offered to embrace Christianity if they would form an army of their followers to restore him to the throne. While the Protestant missionaries advised him to apply to the British East Africa Company, many of their native adherents joined those of the French priests and, aided by the Englishman Stokes, who had been a missionary, then a trader, and has latterly been in the service of the Germans, the Christians defeated Kiwewa's army and re-established the exiled Mwanga in power in the summer of 1889. Not long afterward Dr. Peters arrived, and Mwanga, who had applied in vain to Mr. Jackson, the representative of the British East Africa Company for aid in his difficulties, made overtures for placing the kingdom under the protectorate of Germany. He was convinced that it must fall eventually under the dominion of the Europeans, who had established their power in the coast region, and thought that he could choose among the European rulers the suzerain that would offer him the most advantages. For an English protectorate he had an aversion, and when nothing came of his first proposals to Germany he turned to the Catholic priests and offered to give his allegiance to France, having first rejected Mr. Jackson's offer to assume for the British East Africa Company the entire government of the country. The company proposed to dispose of the revenues, control trade, and maintain order, and to retire the King and the chief dignitaries on pensions. After the Anglo-German agreement of July, 1890, confirmed their claim to the country, the British East Africa Company's officials, although the countries forming the Empire of Uganda were the immediate goal of their enterprise, contented themselves with making their position secure on the coast, hoping with the transit duties to keep expenses within the revenue and distribute some surplus among shareholders while building docks, roads, and a railroad, and extending gradually inland their political administration. When Emin Pasha advanced in the direction of Uganda they feared that accomplished facts might upset treaty arrangements. The news of the Anglo-German treaty assigning Uganda to England was brought by Mr. Walker, an English missionary, on Nov. 1, 1890, and was confirmed shortly afterward by Emin Pasha's note declining to take possession of the country in the name of Germany. The King and his ministers, all followers of the Roman Catholic priests, proclaimed a French protectorate, and were ready to fall upon the Protestant party and drive the British missionaries from the country, when an army of Mahdists, whose aid the Arab slave-dealers had obtained, appeared on the northern frontier to conquer the country for Mohammedanism before it could be occupied by Christian forces. All parties united and drove back the invaders. Lest the King's preference for Germany should impel him to place Emin Pasha in control of the country, the British East Africa Company ordered Capt. F. D. Lugard to

proceed to Uganda. He had ascended the Sabaki river, which he recommends as the route for the proposed railroad, and was engaged in building a station when the order came. With his force of 300 Soudanese and Zanzibaris he marched northward, entered Usogo through Kavirondo, and on Dec. 13, six weeks after he set out from Kikuyu, he was on the Nile, which forms the boundary between Usogo and Uganda, and five days later in Mengo. Seizing a position on a hill, he demanded that the King should sign a treaty. The Protestant natives were scarcely less hostile to the English than the Catholics, who were only restrained by their bishop from annihilating the British force. The King was too politic and timorous to consent to an attack, and on Dec. 26 he gave way to Lugard's threats and signed a treaty for two years. He had sent envoys to the coast to inquire into the political situation, and after signing he said that if the Germans had not abandoned Uganda to the English he would revoke the treaty and accept their protectorate. In February, Capt. W. H. Williams arrived with a body of troops to re-enforce Capt. Lugard, who had built a strong fort at Mengo. The Protestants suffered in consequence of the presence of the British. They were plundered and murdered by the King's party, Capt. Lugard not daring to interfere till Capt. Williams arrived, when he demanded that the King should see that they had justice. The Catholics and the heathen united with the intention of expelling the Protestant natives and attacking the British fort. To avert civil war, Mwanga turned to Capt. Lugard, and by his advice, supported by his prestige, the disputes about land and slaves, which were at the bottom of the difficulty, were equitably arranged. Lest the civil strife should be rekindled, Capt. Lugard proposed to the King to call his warriors to arms, and with the aid of his own troops, with their repeating rifles and Maxim guns, to give battle to the exiled Mohammedans and Arab slavers, who, having obtained aid from the Mahdists, and formed an alliance with the Wanyoro and Kabrega, were gathered in great force near the frontier, ready to overwhelm the Christians with an army of 10,000 men. In October the King's and Capt. Lugard's forces were reported to have met the Mohammedans and defeated them in a pitched battle in Unyoro.

The expense of maintaining an armed force in Uganda exhausted the capital of the British East Africa Company, which applied to the English Government for a guarantee of interest to enable it to raise fresh capital for the construction of the railroad from Mombasa to the lake. Such a guarantee would not merely pledge the credit of the Government, but would virtually commit it to send British troops to protect the property in which it was interested in case the East Africa Company excited the hostility of the natives. For this reason Sir William Harcourt declined to allow to pass through Parliament without full discussion a preliminary bill to grant £20,000 for a Government survey of the railroad route and for the exploration of the commercial resources of British East Africa. Unable to continue the expensive occupation of Uganda, or, perhaps, with the object of bringing the pressure of public opinion

to bear on the opponents of Government assistance, the company announced in the autumn that unless imperial aid was secured, it would be compelled to withdraw its forces and abandon Uganda. The company asked of the Government a subsidy of £40,000 a year for the period that was expected to elapse before the railroad could be built and a paying business developed. Without waiting for the action of Parliament, the company proceeded to make a final survey, obtaining the services of Capt. Macdonald, of the Royal Engineers, for the purpose. The cost of the railroad is estimated at £1,800,000.

German East Africa.—The German sphere of influence is bounded on the north by the territory of the British East Africa Company, and on the west it is divided from the Congo State by a line starting in the north 1° south of the equator near the head of Albert Edward Nyanza, and continued by the Rusisi river and the whole length of Lake Tanganyika. On the southwest it is divided from the British protectorate of Nyassaland by a line defined in the treaty of 1890 which is drawn from the south end of Lake Tanganyika to the north end of Lake Nyassa in such a way as to leave the Stevenson road on the British side of the boundary, which is continued southward through about half the length of Lake Nyassa till Portuguese territory is reached, from which the German sphere is separated by the Rovuma river flowing northeastward into the Indian Ocean at Cape Delgado. The area is estimated at 345,000 square miles, and the population at 1,760,000. The value of the exports in 1889 was 2,847,000 rupees. The export of ivory was 1,197,251 rupees; of gum copal, 364,289 rupees; of sesame, 250,679 rupees; of caoutchouc, 306,805 rupees. The German Government is represented in East Africa by an imperial commissary. The German flag was raised in the place of that of the Sultan of Zanzibar at Bagamoyo and other points on the coast on Jan. 1, 1891, and notice was given that goods would be allowed to be imported or exported only at the ports of Tanga, Pangani, Saadani, Bagamoyo, Dar-es-Salaam, Kilwa, Lindi, and Mikindani. A uniform duty of 5 per cent. was placed on imports from Zanzibar. Major von Wissmann, who organized the *Schutztruppe* or military force of the protectorate, and as the first imperial commissary acted also as commander-in-chief during the operations for the suppression of the Arab revolt in 1889-'90, was relieved in April, 1891, and in his place was appointed as civil Governor, Baron von Soden, formerly Governor of Cameroons. The command of the *Schutztruppe* was given to Lieut. von Zalewski, who had authority to act for the Governor when the latter was absent. Baron von Soden expected to reduce the *Schutztruppe*, changed into an imperial force, for East Africa was transformed into a crown colony under the immediate direction of the German Government, and to increase the revenue by raising import duties and taxing natives, so as to obtain 2,000,000 marks per annum, which was considered sufficient to defray all expenses of administration, improve communications and open roads, and protect missions and companies. A military force of 1,000 men, half the former number, was considered sufficient, 200 forming a flying column

and the rest being disposed of in garrisons. Major von Wissmann and Dr. Karl Peters each accepted the office of commissary for East Africa, at the disposal of the Governor.

Emin Pasha's Expedition.—When Emin Pasha reached the coast of Zanzibar with Stanley's relief expedition at the close of 1889 he took service under the German East Africa Company, and in April, 1890, departed at the head of a large military force officered by German military officers, with an abundant supply of military stores and trade goods, for the purpose of establishing stations in the interior and reopening the caravan routes that had remained closed during the rebellion of the coast tribes. Major von Wissmann had great confidence in the local influence and knowledge of Charlie Stokes, an old resident in the country, who was married to the daughter of a powerful chief, and expected Emin to work in conjunction with him in the peaceful extension of German influence and the development of trade with the people in the lake region. When Emin went on to Tabora and raised the German flag, Stokes made complaint, and when the Pasha advanced into Usonga, took sides in a local war and established one of the rival chiefs in power, and afterward broke up a caravan and released a large number of captive slaves belonging to influential Arabs in Tabora, Stokes wrote to Wissmann that he was destroying German influence. Emin went forward to make ready a station on Victoria Nyanza for floating a steamboat, severing communication with Stokes, and Wissmann, fearing that he might advance into Uganda and proclaim a German protectorate over that country, not knowing that a delimitation treaty had been concluded between Germany and England, sent orders for him to return to the coast as soon as he had established a lake station. Major von Wissmann's charges of insubordination against Emin Pasha, which were based on the representations of Stokes, were not approved by Chancellor von Caprivi, and this was one of the reasons for replacing him with a civil administrator. He complained that Emin had far exceeded the limit fixed for the cost of the expedition, but later enough ivory was sent to the coast to more than repay the expenses up to date. While Lieut. Langheld and Lieut. Sigl, two of his military subordinates, were fighting a number of battles with the hostile Wangonis, a warlike tribe of Zulu origin, whom they finally subdued with the aid of the Wanyamwesi, Emin was engaged in building a permanent station at Bukoba, on the west shore of Lake Victoria, where he arrived on Oct. 31, 1890, having first established a station at the south end. At Bukoba he obtained a large grant of land from the local chief with a view to establishing there the chief depot for the German trade, as the climate is mild and the place healthful. The place to buy ivory was the neighboring kingdom of Karagwe, which has always been the chief market for all the countries around. He received a cordial invitation from the ruler of Karagwe, and, in February, 1891, went to plant a small station there, leaving Lieut. Langheld with a garrison at Bukoba. In Karagwe he founded a German station at Kafuro, where he left an officer and a guard of soldiers. King Kigeri, of

Ruanda, a country that has hitherto been closed both to Europeans and Arabs, invited the Pasha to visit him, and when the central station in Karagwe was completed he went thither with his expedition, the most powerful of any that had visited this part of Africa with the exception of the force with which he and Stanley marched from Albert Nyanza to the coast. It was the proximity of Emin Pasha that impelled the British East Africa Company to bankrupt itself to fit out a hurried expedition and sent Capt. Lugard by forced marches to Mengo in order to be beforehand in making a treaty of protection with Uganda. King Mwanga desired a German protectorate. He had been willing to treat with Dr. Peters, whose action was disclaimed by the German Government. When Emin Pasha was on the lake, he sent envoys to offer his allegiance to Germany. Emin had then learned of the Anglo-German agreement, and he returned answer that Uganda was in the English sphere. After they had secured the treaty with Uganda the English were still afraid that Emin Pasha would return to Wadelai and raise the German flag over the province he had formerly ruled as the Khedive's Governor, as that was not explicitly resigned to England. Emin had a plan to go from Ruanda to Lake Tanganyika to prepare stations for trade and make arrangements for launching steamers. Such a continuation of the expedition would be dangerous, for the Arabs were massed at the north end of Tanganyika, killing people and carrying off captives, and they were prepared to make a desperate fight for the slave trade. He conceived an ambitious project, and to carry it out he only needed a few more rifles and a supply of cartridges. This was to pass through the northeast corner of the Congo State's territory into the unclaimed and unexplored regions lying north of the fourth parallel, which form the Hinterland of Cameroons, and make his way across the continent to the German colony on the western coast.

The Zalewski Expedition.—Trade revived and caravans began to come down to the coast along the old caravan routes as soon as the Arab revolt was put down by Major von Wissmann in 1890. The task to which the German military forces were confined was to guard the trade routes from the attacks of predatory tribes, such as the Massai in the north and scattered Zulu tribes in other parts of the German sphere. No attempt was made to defend the peaceful tribes that were being annihilated by Arab slave raiders, or to stop the new routes that the slave traders had made, though whenever a slave caravan was encountered by a German detachment, the slaves were liberated and the ivory was confiscated. In the Kilimandjaro region the two companies had to compete for the customs, and the Germans exerted themselves to improve the roads, prevent Massai depredations, and attract as much trade as possible to their ports. Major von Wissmann, in February, 1891, built a fortified station at the foot of the mountain, and left a body of soldiers there, after chastising the Great Arusha tribe and other Massai marauders. Dr. Peters, who had re-entered the service of the German East Africa Company, was active later in developing commerce and improving its security in the frontier region. The old routes of

the ivory trade to Bagamoyo and Dar-es-Salaam were the chief care of the German officers, who made no attempt to establish their authority over the wild tribes in the south between Lake Nyassa and the sea. The people of Usugara and the Swaheli half-castes of the coast, after Bushiri was hanged and Banaheri banished, and their fight for the slave trade was over, returned to peaceful planting and trading. The Germans did not interfere with slavery, but accepted it as a necessary condition of tropical agriculture, and employed slaves on their own tobacco and cotton plantations. The English found themselves compelled to do the same, but by their decree of future emancipation and their system of enabling slaves to earn their freedom, they prevented planting operations on their coast, except experiments instituted by the company. The Arab slave traders of the coast districts and of Tabora and other centers in the interior could still carry on their business in secret by avoiding German troops and the old trading stations. The semi-civilized natives of Unyamwezi and Karagwe were reconciled to German sovereignty by Stokes and Emin. Not so the warlike tribes in the north, the Watuta and Wangoni, extreme outposts of the Zulu migration. The latter were unsuccessfully attacked by Stokes, but were afterward so severely punished by Emin's lieutenants that they sued for peace in February. After that there was nothing to impede the regular channels of traffic and transportation in the neighborhood of Lake Victoria, although the small German forces were there only by the sufferance and support of the inhabitants, who aided them in putting down the unruly tribes. It was near the other end of the trade route, within striking distance of the coast, that a serious interference with trade continued to exist. Another Zulu tribe, the Wahehe, formerly occupied an elevated plateau north of the Ruaha river, about 100 miles southwest of Bagamoyo, and 150 miles from the north end of Lake Nyassa. They were successful cattle breeders and agriculturalists, and added to their possessions by frequent raids on their neighbors. About twenty years ago they conquered the great chief of the Warori, and extended their dominion over Ururi, Ubena, and Usango. They received *hongo* or tribute from the whole country between the Ruaha and the Rufiji, and as allies of Bushiri, with whom their chief had sworn blood brotherhood, they continued to wage a savage war against the Germans by plundering the caravans that passed through Ugogo, and robbing villages. The chiefs were warned by Baron von Bülow, commandant at Mpwapwa, and made promises of amendment, but continued their depredations. He had not force enough to cope with them. When Baron von Soden and Lieut. von Zalewski were settled in their posts, they concluded that it was necessary to punish the Wahehe. An expedition was fitted out, which started from Mpwapwa on July 30. The chiefs, Mamkussa and Manamtua, in the Rubeho mountains, fled before them, and they burned the villages as they advanced. Passing through Marore, they crossed the Ruaha at Masombi, burned about fifty villages in the thickly peopled plateau of Mage, and on Aug. 17, when entering a thick forest on the march to Mdwaro, they were set upon by the Wahehe,

who, armed only with spears and shields, rushed in before the advanced guard could fire twice, and the Askari soldiers fled in confusion. Lieut. von Zalewski and most of his officers, with more than half the soldiers, died on the battle-field. Lieut. von Tettenborn, with a small band of Soudanese, took position on a treeless hill, where he was joined by Lieut. von Heydebreck, who first made a stand in a hut. They remained till the evening of the next day, in order to save any who had escaped from the fight, which took place about two miles from there. Including the wounded, 4 Europeans, 2 Arab officers, 62 soldiers, and 74 porters were brought away, while 10 Europeans, about 250 soldiers, and 96 porters perished. The chief, Kuava, and about 700 of his warriors, who numbered not fewer than 3,000 altogether, fell in the battle, and the Wahehe, being without a leader, did not attack the remnant of the expedition, but during the retreat marched in a parallel line, keeping at a distance.

The disaster that overtook the Zalewski column undid the work of months, destroying to a great extent the German influence that had been obtained through Emin's mission in the lake region, and rendering the caravan trade impossible, unless each caravan was accompanied by a strong armed force. Baron von Soden and the German Government were unwilling for the present to undertake the subjugation of the Wahehe and the many other tribes that were encouraged to fight the Germans by the reverse the latter had sustained. The determination of Baron von Soden not to develop military activity in the lake country made a change in the plans of Major von Wissmann, who was making arrangements to float a steamer on Lake Victoria. The steamer had been bought by popular subscriptions, and to raise money for transporting it to the Nyanza a lottery was proposed, which failed, however, to obtain the sanction of the Prussian legislature, although the King was in favor of the plan. After the Zalewski disaster, Wissmann proposed to recruit several hundred Soudanese and Zulu soldiers to enable him to carry out his intended operations on the lake. When the colonial authorities declined to incur the risk and expense, which the votes obtained from the Reichstag in the late session would not cover, Major von Wissmann asked leave to retire from the colonial service.

ECUADOR, a republic in South America. The executive power is exercised by a President, elected for four years by 900 electors chosen by the people. The Congress consists of a Senate, in which each of the 16 provinces is represented by 2 members, and a House of Representatives, the members of which are elected by the general vote of all Roman Catholic citizens of full age who can read and write, in the proportion of 1 to every 30,000 inhabitants. The term in the Senate is four years, and in the lower house two years. Gen. Antonio Flores was elected President on June 30, 1888. The President may summon an extraordinary Congress in certain contingencies, but has no power to dissolve or prorogue the House of Representatives. A bill to which he has refused assent can be passed over his veto by a simple majority vote.

Area and Population.—The area of Ecuador is in doubt because of boundary disputes be-

tween Colombia on the north and Peru on the south. A boundary treaty, somewhat reducing the territory formerly claimed, has been signed with Peru and ratified by the Ecuadorian Congress, but a section of the Peruvian Congress demanded further concessions. The area is estimated at nearly 120,000 square miles. The population is about 1,300,000. There are 100,000 whites, 300,000 of mixed blood, and an Indian population that is estimated at 900,000, but can not be determined by a census because these people will give no information about themselves. Quito, the capital, has 50,000 inhabitants, and Guayaquil, the chief port, about 45,000. The republic, though very backward in commerce and communications, has made progress in education, especially in the two chief cities. In the schools and higher institutions, according to an educational census taken in 1891, there are 1,137 teachers and 53,000 pupils.

Finance.—The receipts for 1889 were officially stated to be \$9,815,549 in the silver currency of the country, the silver *sucre*, or Ecuadorian dollar, being equal in value to the five-franc piece. This sum includes \$5,044,163 of loans. The custom-house receipts are more than half of the ordinary revenue, amounting in 1889 to \$2,473,740. The expenditures balance the receipts in the budget for 1889, the chief items being \$4,308,339 for the public debt, \$2,999,436 for financial and internal administration, and \$1,099,261 for war and marine. The public debt on Jan. 1, 1890, amounted to \$13,382,560, of which \$5,424,398 represent the internal and \$12,958,162 the foreign debt, which is mainly held in England.

The Army and Navy.—Although a national convention in 1884 fixed the strength of the standing army at 1,200 men, there were reported to be 266 officers and 2,492 soldiers in active service in 1890. The naval force of the republic consists of a small cruiser, a gunboat, and a transport, with an armament of 6 guns in all.

Commerce and Communications.—The value of the imports in 1889 was \$9,681,456 and that of the exports \$7,910,210. The chief exports were cacao, of the value of \$5,621,000; vegetable ivory, \$530,000; coffee, \$511,000; India-rubber, \$262,000; hides, \$171,000; tobacco, \$100,000. The figures given above do not include the export of precious metals, amounting in 1889 to \$810,000. The export of Peruvian bark, which amounted to over \$500,000 in 1882, declined to \$40,000 in 1889. The chief imports are dry goods, clothing, hardware, drugs, and wine. In 1889 the number of vessels entered was 669, of 393,346 tons. The only means of internal land communication, except a railroad 57 miles in length and an unfinished highway between Guayaquil and the capital, are bridle paths for pack animals, which are impassable during the rainy season, which lasts 7 months. At that time of the year the rivers Guala, Daule, and Vines, which traverse the low-lying agricultural lands west of the Cordillera, are navigable for river steamers, of which there are about a dozen of American construction. The capitals of all the provinces are connected by about 1,000 miles of telegraphs. In an extraordinary session called in 1890 the Ecuadorian Congress granted a concession for a railroad, in length about 150

miles, from Guayaquil to Riobamba, including the section already built to Chimbo, 7 per cent. interest on \$10,000,000 capital being guaranteed for thirty-three years by the Government, which will become absolute owner of the property at the end of fifty years. The line traverses the three ranges of the Andes before reaching Riobamba, and can be continued to Quito at comparatively small expense. Another line was authorized to connect Quito with the port of Bahia, the distance being 180 miles. On this railroad the Government guarantees 6 per cent. interest for fifty years, and will take it over without other compensation at the end of seventy-five years.

A new tariff, which went into effect on Jan. 1, 1891, increased the specific duties on many articles of import and added an extra *ad valorem* duty of 25 per cent. on ready-made clothing and of 20 per cent. on all other imports, and in addition to that a special duty of 10 per cent. to meet interest and provide a sinking fund, in pursuance of an arrangement made with the foreign bondholders. An export duty of 64 cents per quintal is levied on cocoa, coffee, and hides, and \$5 on rubber and tobacco.

EGYPT, a principality in northern Africa, tributary to Turkey. The Government is an absolute hereditary monarchy, under a prince who has borne since June 26, 1867, by a perpetual concession of the Sultan of Turkey, the title of Khedive or Viceroy. The reigning Khedive of Egypt and Sovereign of Nubia, the Soudan, Kordofan, and Darfur in 1891 was Mohammed Tewfik, born Nov. 19, 1852, died in January, 1892, who succeeded his father, Ismail, when the latter was compelled to abdicate, on June 26, 1869, by the English and French governments intervening in behalf of the European bondholders. From that time till 1882 the Government was conducted under a dual control, those governments each appointing a controller-general, without whose recommendation or consent no measure affecting the financial condition of Egypt could be taken. In 1882 Arabi Pasha, a colonel in the Egyptian army, headed a military revolt for the purpose of establishing a popular representative system of government and abolishing the rule of English and French officials. The French Government having declined to take part in the bombardment of Alexandria and the invasion of Egypt, British troops defeated the Egyptian army and occupied the country. The dual control was abolished by khedivial decree on Jan. 18, 1883, and an English financial adviser, whose concurrence is requisite in all financial measures and who has a right to sit in the Council of Ministers and to take part in the deliberations was appointed. The ministry at the beginning of 1891 was composed as follows: President of the Council, Minister of the Interior, and Minister of Finance, Riaz Pasha; Minister of Foreign Affairs, Zulfiakar Pasha; Minister of Justice, Fakhri Pasha; Minister of Public Instruction, Ali Mubarek Pasha; Secretary-General, Kahil Pasha. The British diplomatic representative and consul-general, who is the financial adviser of the Khedive, is Sir Evelyn Baring. Sir Colin Scott-Moncrieff has presided over the Department of Public Works since the British control was established, and Gen. F. W. Grenfell, hold-

ing the rank of Sirdar, has charge of the military organization.

Area and Population.—Egypt proper, to which the authority of the Khedive is limited since the evacuation of the Soudan at the demand of the British Government in 1884, extends to the second cataract of the Nile at Wady Halfa, beyond which a part of the Mudiriah of Dongola has since been occupied. In the east the governorships of the Isthmus of Suez, El Arish, in Syria, and Kosseir, or Suakin, on the Red Sea coast, are under the immediate dominion of the Khedive, and in the west the oases of the Libyan desert. The total area is 400,000 square miles, though 12,976 square miles, forming the narrow valley of the Nile and its delta, include the whole settled and cultivated area; and of this, 4,750 square miles are barren or covered with water. The population in 1882 was 6,817,265, divided into 3,401,498 males and 3,415,767 females. The foreign population at the time of the census was 90,886, about two fifths being Greeks, one fifth Italians, more than one sixth French, one twelfth Austrians, and one fifteenth English. The number of resident foreigners has greatly increased since then, and the proportions have changed in consequence of the British occupation.

Finance.—In the budget for 1891 the total revenue was estimated at 9,820,000 Egyptian pounds (1 £ E. = \$4.97). The land tax, date taxes, etc., were reckoned at £ E. 5,100,000; professional and urban taxes, etc., £ E. 155,000; customs, £ E. 1,380,000; *octrois*, £ E. 230,000; salt and natron taxes, £ E. 230,000; fisheries, £ E. 80,000; navigation dues, £ E. 74,000; railroads, £ E. 1,350,000; telegraphs, £ E. 25,000; port of Alexandria, £ E. 110,000; posts, £ E. 246,000; light-houses, £ E. 90,000; Ministry of Justice, £ E. 365,000; exemption from military service, £ E. 100,000; rent of Government property, £ E. 70,000; Governorship of Suakin, £ E. 13,000; pension fund, £ E. 55,000; other receipts, £ E. 147,000. The total expenditure was fixed at £ E. 9,320,000, divided under the several heads as follows: Public debt, £ E. 4,061,035; tribute to the Sultan, £ E. 665,041; the Khedive's civil list, £ E. 100,000; civil list of ex-Khedive Ismail Pasha, £ E. 114,127; the Khedive's private Cabinet, £ E. 54,420; Ministry of Public Works, £ E. 458,300; Ministry of Justice, £ E. 367,448; administration of provinces, £ E. 353,716; Ministry of Finance, £ E. 116,797; Ministry of the Interior, £ E. 110,793; Ministry of Public Instruction, £ E. 88,478; other ministries, £ E. 125,711; administration of customs, £ E. 116,469; *octroi* administration, £ E. 42,359; salt and natron monopolies, £ E. 63,157; fisheries, £ E. 8,392; navigation, £ E. 3,433; railroads, £ E. 635,211; telegraphs, £ E. 35,000; port of Alexandria, £ E. 195,000; posts and postal boats, £ E. 218,611; light-houses, £ E. 26,769; public security, military, police, prisons, and army of occupation, £ E. 679,839; Suakin, £ E. 111,428; pensions, £ E. 435,000; abolition of *corvée*, £ E. 250,000; other expenditures, £ E. 58,786.

The capital of the Egyptian debt at the beginning of 1891 was £ E. 106,937,760, made up as follows: Guaranteed loan at 3 per cent., £ E. 9,069,100; privileged debt at 3½ per cent., £ E. 29,500,000; unified debt paying 4 per cent.

interest, £ E. 55,988,480; Daira Sanieh loan at 4 per cent., £ E. 17,299,360; Domains loan at 5 per cent., £ E. 5,080,820. The interest on these various loans for 1891 amounted to £ E. 4,112,969, in addition to which there was to pay £ E. 198,800 interest on Suez Canal shares held by the English Government, £ E. 34,870 to the Daira Sanieh loan commissioners, and £ E. 153,846 on account of the Moukabala, or internal debt, which was commuted into an annuity of that amount running till 1930.

In 1890 the Egyptian Government collected a larger revenue than in any previous year since the reign of Ismail Pasha. The total was £ E. 10,237,000. Of the surplus, amounting to £ E. 599,000, only £ E. 270,000 was available for public needs and the remission of taxation, the balance being retained by the Commissioners of the Public Debt, in accordance with the conditions attached by France to her sanction of the conversion scheme. The reserve fund, which was constituted in 1887, amounted to nearly £ E. 1,745,000 at the end of 1890, including a special reserve of £ E. 400,000 that is likewise available against any extraordinary deficiency in the revenue or extra works of public utility. The regular expenditure of the Public Works Department in 1890 was £ E. 900,000, and in addition to this £ E. 435,000 were expended for extraordinary purposes, for which a further sum of £ E. 335,000 was appropriated in 1891. The sacrifices of revenue made in the last few years are stated to be £ E. 656,000, viz., £ E. 410,000 for the abolition of forced labor; £ E. 123,000 for the remission of professional taxes; and £ E. 123,000 for abolishing weighers' fees and other relief to tax payers. The net revenue from customs in 1890 was £ E. 1,300,000, the increase of £ E. 360,000 being chiefly due to the raising of the tobacco duties and the prohibition of the native cultivation of tobacco. Of the duty collected on tobacco, £ E. 510,000 was estimated to be due to importations in anticipation of the increased tax on tobacco. The remission of taxation carried out in 1890 amounted to £ E. 53,000, the sheep and goat tax and the *octroi* duty on oil having been abolished. Telegraph rates were reduced 50 per cent., making them as low as anywhere in Europe, and the price of postal cards was lowered. The total amount of fiscal relief involved in the measures carried through in 1890 was estimated by Sir Evelyn Baring at £ E. 175,000. The Daira Sanieh deficit, which was £ E. 268,000 in 1886, was reduced in 1890 to £ E. 80,000, and the European managers expected in 1891 to be able to show a small surplus. The powers were asked for their consent to the application of £70,000 of the proceeds of *octroi* duties to the improvement of the sewers and sanitary arrangements of Cairo. An edict prohibiting direct imports of tobacco from Greece, France, and Turkey, with the object of checking smuggling, was objected to and recalled as being a violation of the capitulations. A further step in the conversion scheme was consummated by a contract made by the Rothschilds of London and Paris on March 5, 1891, for the conversion of the Ottoman 5-per-cent. loan of 1877 into 4-per-cent. bonds, to sixty years.

Military Forces.—The Egyptian army, commanded by about 60 English officers, has at

present a strength of about 13,000 men. The British army of occupation, under the command of Gen. Sir James Dornier, numbered 3,300 men in the beginning of 1890.

Agriculture.—The cultivated area in Egypt is 4,963,460 feddans, about 5,112,000 acres. Over three fifths of the population are engaged in agriculture. The winter crops are corn, wheat, and various other grains. Summer crops of rice, sugar, and cotton are cleared off in time for the winter sowing in October or November. Between July and October sorghum and all kinds of vegetables grow from the seed to maturity. In Upper Egypt the old system of submerging the land at high Nile is still practiced. In the delta, for the sake of the cotton and sugar crops, this has been to a large extent superseded by simple irrigation. Land thus treated is not renewed by the fertilizing alluvium held in suspension in the Nile at flood time, and gradually becomes alkaline and sterile. The canals traversing the delta in every direction are kept full at low Nile by means of the great dam, called the barrage, that has been completed by Sir Colin Scott-Moncrieff. The average yield of cotton is 325 pounds an acre. In 1890 the cotton crop covered 864,400 feddans. The number of date-palm trees in Upper and Lower Egypt is 3,452,674. The number of farm animals and cattle, including camels, is stated to be 1,668,860. In 1889 the area of the wheat crop was 971,678 feddans; of maize and durra, 1,406,073; of clover, 864,680; of beans, 546,705; of barley, 485,651; of lentils, 47,182; of rice, 115,988; of fenugreek, 146,823; of potatoes and other vegetable crops, 46,747; of sugar cane, 58,611; of vetch, 27,624; of melons, 30,101; of lupins, tobacco, peas, flax, henna, indigo, castor-oil plant, sesame, etc., 42,679. The area producing two crops was 922,000 feddans. In Lower Egypt four crops are obtained in three years and in Upper Egypt seven crops in six years. In 1889 the failure of the Nile threw 298,745 feddans out of cultivation. In 1890 the yield of cotton was nearly 400,000,000 pounds, that of sugar was 60,000 tons, exceeding by 20 per cent. the great crop of 1886, and all kinds of cereals yielded abundant crops. Having completed the barrage, the Government gave its attention to a scheme for irrigating Upper Egypt by means of storage reservoirs. The ambitious scheme of the late M. de la Motte for damming up the Nile and making it navigable up to Khartoum was pronounced impracticable by an English engineer, Mr. Willcocks, who went over the ground in 1891 and worked out a plan for a barrage at the first cataract that would submerge the ruins of Philoe. Others proposed dams between Wady Halfa and Assouan, ponding up the river in the narrow valley, reservoirs in the delta, or the restoration of the Raiyan basin of Lake Moeris. Finally, the Government decided to call an international commission of engineers to meet at Cairo and fix upon a site for a storage reservoir within the present limits of Egypt.

Commerce.—The exports of merchandise in 1889 had a total value of £ E. 11,953,200, as compared with £ E. 7,738,343 in 1888 and £ E. 8,137,054 in 1887; the value of the imports was £ E. 7,020,960, as compared with £ E. 10,418,213 in the preceding year and £ E. 10,876,417 in

1887. The shares of foreign countries in the external trade of 1889 is shown in the following table:

COUNTRIES.	Imports.	Exports.
Great Britain and British possessions in the Mediterranean	£ E. 2,648,517	£ E. 7,775,905
Turkey	1,422,950	320,568
France and Algeria	715,700	908,681
Austria-Hungary	657,687	986,689
Italy	216,501	816,477
Russia	358,868	847,876
India, China, etc.	501,161	15,576
Greece	97,066	81,592
America	58,014	22,988
Other countries	854,502	245,414
Total	£ E. 7,020,961	£ E. 11,953,196

The import of cotton goods in 1889 was valued at £ E. 1,310,820; of silk, linen, woolen, and other textile manufactures, £ E. 599,349; of coal, £ E. 440,983; of clothing and hosiery, £ E. 317,711; of timber, £ E. 288,540; of coffee, £ E. 254,202; of wine, beer, and spirits, £ E. 243,810; of tobacco and cigars, £ E. 272,042; of petroleum, £ E. 351,276; of machinery, £ E. 103,943; of iron and steel manufactures, £ E. 264,207; of indigo, £ E. 177,057; of fresh and preserved fruit, £ E. 176,265; of live animals, £ E. 71,724; of wheat and flour, £ E. 219,635; of rice, £ E. 128,624; of refined sugar, £ E. 40,282. The values exported of the principal commercial products of the country were as follow: Cotton, £ E. 8,547,716; cotton seed, £ E. 1,453,892; sugar, £ E. 406,795; beans, £ E. 326,836; wheat, £ E. 165,608; rice, £ E. 74,809; Indian corn, £ E. 2,669; hides and skins, £ E. 86,118; onions, £ E. 63,214; wool, £ E. 63,000; flour, £ E. 5,678; lentils, £ E. 10,762; gum arabic, £ E. 2,566. Of the petroleum in 1889 the United States furnished 27 per cent. and Russia 73.

Internal Communications.—The railroads of Egypt have a total length of 1,123 miles. The receipts in 1889 were £ E. 1,301,529 and the expenses £ E. 585,000. There were 4,378,453 passenger tickets sold, and about 150,000 tons of goods transported. The telegraph lines of the Government had in 1889 a total length of 3,640 miles, with 5,704 miles of wire. The number of messages in that year was 693,640. The postal traffic in 1888 comprised 5,529,000 domestic and 3,110,000 international letters, 473,000 post cards, and 4,446,000 newspapers, samples, etc.

Navigation.—The number of vessels entered at the port of Alexandria during 1889 was 2,224, tonnage 1,549,961; the number cleared was 2,216, tonnage 1,528,977. Of the number entered, 521, of 666,383 tons, were British; 142, of 261,565 tons, were French; 1,154, of 259,255 tons, were Ottoman; 67, of 99,910 tons, were Russian; 69, of 58,004 tons, were Italian; and the rest were principally Greek, Swedish and Norwegian, and Spanish. At other ports besides Alexandria 4,328 vessels were entered or cleared, of which 1,816, of 2,958,291 tons, were British.

The Suez Canal.—The canal is 87 miles long, including 21 miles of lakes. The share capital is 197,338,500 francs. The indebtedness is 233,367,608 francs, paying 8 and 5 per cent. interest. The net profits, in excess of 5 per cent. interest on the capital stock, in 1889 were 37,212,821 francs, of which, according to the

statutes, 71 per cent. was divided among the holders of the 394,677 shares, 2 per cent. went to the employees of the company, 2 per cent. to the managing directors, 10 per cent. to the 100,000 founders' shares, and 15 per cent. to the Egyptian Government. Of the 394,677 shares, 176,602 are held by the British Government, having been purchased from the Khedive Ismail, who had alienated the dividends up to 1894, till which date the Egyptian Government is obliged to pay 5 per cent. interest on their face value. During 1889 the number of vessels that passed through the canal was 3,425, of 9,605,745 tons. Of these, 2,611, of 7,478,369 tons, were British; 168, of 547,602 tons, were French; 194, of 463,225 tons, were German; 103, of 279,331 tons, were Italian; 146, of 359,722 tons, were Dutch; 54, of 168,707 tons, were Austro-Hungarian; 33, of 101,792 tons, were Spanish; 48, of 90,046 tons, were Norwegian; 23, of 57,254 tons, were Russian; 22, of 31,376 tons, were Turkish; 8, of 6,743 tons, were Egyptian; 3, of 5,680 tons, were Japanese; 5, of 3,805 tons, were American; and the rest were Belgian, Chinese, Portuguese, and Danish. The number of passengers who made the transit in 1889 was 180,594.

French Obstruction.—British direction and supervision of the Government have increased the national wealth, though the present prosperity has been achieved at the cost of the permanent impairment of the soil by cotton culture. The finances of the Government have been placed on so secure a foundation that Sir Evelyn Baring asserts in his report for 1891 that it would require a series of untoward events, the occurrence of which is in the highest degree improbable, to endanger the solvency of the Egyptian treasury. There was a surplus of £ E. 599,000 at the end of 1890, much more than was calculated on, and for 1891 a surplus of £ E. 500,000 was anticipated. The unified debt, which is mainly held in France, fell to 30 in consequence of the rebellion of Arabi Pasha, and since the British occupation has risen to within 4 per cent. of par. A part of the surplus revenue, viz., £ E. 312,000 a year, was obtained by the conversion of the privileged debt and the loan of 1888 and the Daira Sanieh and Domain mortgage bonds. France gave a conditional assent to the application of the economies thus resulting to the abolition of the *corvée* and to increasing the military and police forces. All the other treaty powers having consented, there was no *corvée* in Egypt in 1890, probably for the first time in the history of the country, all the cleaning, repairs, and extension of the canals and embankments having formerly been done by the forced and unpaid labor of the *fellaheen*, who were often called away when their crops needed their attention, and compelled to maintain themselves during the sixty days when the Government required their labor. In 1884 the army of laborers thus pressed into the service of the state was 85,000 in number. This method was so uneconomical that the English engineers were able to reduce the number gradually and still carry out the most important achievement of the British control—the improvement of the irrigation system, by which the water distribution has been increased, the area of cultivation enlarged, and the fluctuations of the Nile regulated to a considera-

ble extent. Without contesting the benefits of English rule as manifested in the re-establishment of Egyptian credit and the restoration and completion of the barrage, which was originally a French work, and, in a minor degree, in the removal of some oppressive taxes, the abolition of forced labor, the reorganization of the hospital and prison services, and the suppression of the slave trade and gradual abolition of slavery, the French Government has preserved an obstructive attitude in regard to the diversion of revenues for the accomplishment of these reforms, in order to remind Great Britain of the broken promises concerning the evacuation of Egypt, which Mr. Gladstone originally declared should take place in a few months. In spite of the material benefits that they have conferred on Egypt, the English have not been able to extirpate the historical influence of the French, and have made themselves hated in the country, because they have superseded the native rule, reduced the Khedive and his ministers to ciphers, and governed as over a conquered people. All direct demands for the evacuation of Egypt come from the country immediately interested, Turkey, which is the suzerain power, prompted by France, and sometimes supported by Russia. But, having Germany and the central powers for allies, the Tory Government of England has treated with indifference the inquiries of the Porte regarding the date of evacuation, making the condition, which is the restoration of order and the re-establishment of the authority of the Khedive, appear more and more remote and impossible. The authority of the Khedive has been purposely reduced to a nullity and the spread of anarchy and the increase of crime, which are the direct result of English rule, are now alleged as the chief grounds for the continued military occupation. The same grounds are advanced for the substitution of a European judicial system for Mohammedan law, which is the boldest step yet taken to perpetuate British dominion in the Nile valley. To this the French Government made strenuous objections, which it could only enforce to the extent of revoking its qualified consent to the application of the sum saved by the debt conversion, compelling the Government to hoard uselessly in the treasury £ E. 312,000 a year until the veto is withdrawn. This does not interfere with the abolition of the *corvée*, which the prosperous state of the finances permits of being continued independently. The decree imposing the same professional tax on Egyptians and Europeans was also rejected by France, on the ground that the text differed from the proposition originally submitted to the powers, but the objection was withdrawn when it was restored to the original form. Notwithstanding the extraordinary efforts that have been made to supplant the French language, more than three fourths of the 7,307 pupils in the subsidized schools, of which there are 47, choose to learn French in preference to English, and 20 Egyptians are sent to France to be educated to one that is trained in England.

Judicial Reform.—Justice Scott, of Bombay, was intrusted with the task of working out a plan for reforming judicial methods. He proposed, among other things, the appointment of a committee to superintend the native tribunals. As this involved the resignation into English

hands of the administration of justice, which is connected with the national religion and the only department of Government still remaining under native control, the proposition was resisted by the Prime Minister and by the Minister of Justice, who declared that the courts worked satisfactorily. The Cabinet, notwithstanding Mr. Scott's protests, referred the question to a commission, consisting partly of officials of the Department of Justice and of judges. Before the idea of subverting the laws of Islam was entertained, and before Justice Scott, who had practiced law in Egypt for ten years before entering on his judicial career in India, had been sent for, the British officials gave their attention to the crime of brigandage, which has grown more frequent in proportion to the extension of foreign interference. It is an Oriental method of revolt against the rule of the infidel, consisting of organized attacks by bodies of armed men upon houses and villages. Sir Evelyn Baring supported the suggestion that when murder was committed the leaders of the band and the organizers of the attack should be held equally guilty with the actual perpetrator of the deed. This proposition was revolting to Mohammedan ideas of justice; and when the Sheikh-el-Abassi, the chief expositor of the sacred law, was consulted by the Government, he submitted a counter-project, proposing for a brigand caught before committing robbery imprisonment until he gave sign of real reformation; for one who has been convicted of robbery, amputation of the right hand and left foot; and capital punishment accompanied with amputation or crucifixion, according to the decision of the Faculty of the Iman, for all who are guilty of murder, without the right of pardon, either by the Khedive or the heirs to the victim. These suggestions, making the Mohammedan law more certain and severe, were rejected as savoring of barbarism by the English advisers of the Government, although approved by the Legislative Council. Notwithstanding the opposition of the ministry and of the commission of representative Egyptians, Sir Evelyn Baring insisted on the nomination of a committee of three to supervise the working of the Egyptian courts, to consist of Justice Scott, with Judge Moriondo, an Italian, and the Egyptian Procureur-Général as his subordinate colleagues, on the addition of another English judge to the Court of Appeals, and on the appointment of Justice Scott to the position of judicial adviser to the Government, with the right to attend Cabinet meetings and to be heard on all questions connected with the administration of justice. When the Khedive yielded to English pressure, although he is said to have told the French diplomatic agent, the Comte d'Aubigny, that he would resist if France would support him with her army and fleet, the ministers offered their resignations, but were induced to remain. The French Government recalled M. d'Aubigny because he failed to prevent the appointment of an English judicial adviser, appointing the Marquis de Reverseaux in his place. In Constantinople the French minister lodged a protest with the Porte against the appointment. When the Judicial Committee, appointed Feb. 10, 1891, had been at work for a month collecting statistics showing that there

was a murder to every 12,000 inhabitants, more than double the annual average in England, and that out of 6,500 criminal cases brought to trial in the preceding year the public prosecuting officers were non-suited in 2,300 cases and failed to convict in half the remainder, a Cabinet meeting was called, to which Justice Scott was not summoned, nor was he to subsequent meetings. On March 31 the Khedive appointed his English secretary, Corbett Bey, and M. Bernard, a Belgian judge of the native courts, to be additional judges of the Court of Appeals. On April 6 Kitchener Pasha, Adjutant-General of the Egyptian army, was appointed to take temporary command of and to reorganize the police. Johnson Pasha was appointed Inspector-General in the Criminal Investigation Department, and Coles Pasha Inspector-General of police. Reforms in the tribunals and the police that were proposed by the Judicial Committee comprised a law for the organization of village police on the basis of regular salaries and punishment for neglect of duty; the introduction of the French law of vagrancy to punish the bands without visible means of subsistence that infested the provinces; an increased number of petty tribunals of summary jurisdiction; provisions to secure co-operation of the police and the tribunals for the detection and repression of crime and an improvement in the *personnel* of the bench and the police department; and, in general, greater energy and stringency in the criminal administration in every branch. Justice Scott proposed further to introduce the system of fining villages in which crime is prevalent. For civil cases he suggested that courts should be established in every district within easy access of the suitors.

Change of Ministers.—Riaz Pasha, on May 12, after a hopeless struggle against the judicial reforms, handed his resignation to the Khedive. In making up a new ministry the Khedive's foreign advisers found few statesmen of established reputation ready to countenance their innovations. Mustapha Pasha Fehmy, who succeeded Riaz as Prime Minister and Minister of the Interior, had the portfolios of the Interior and War and Marine in Nubar's Cabinet, and remained as Minister of War and Marine under Riaz till 1890. Rushdi Pasha, the new Minister of Finance, was Minister of Public Works, and temporarily had charge of the Ministry of Education under Nubar. Zeki Pasha, who was made Minister of Public Works, held that post for a brief period under Riaz, and was Minister of Finance under Nubar. The Ministry of Foreign Affairs was given to Tigrane Pasha, a Christian, who had been Under Secretary in that department when Nubar Pasha was Prime Minister, and after serving for a time as Under Secretary of the Interior under Riaz was restored to his old post. Yacub Pasha Artin, Under Secretary in the Department of Education, was promoted to be Director-General of Education. He is a Christian. The only minister of the Riaz Cabinet who was retained was Fakhri Pasha, the Minister of Justice, who had renounced his objections to judicial reform and was willing to place his experience at the disposition of Justice Scott, who was to be the real head of the ministry. Choukdhi Pasha, the new Minister of War, had previously held a subordinate post. The

new ministry agreed to the vagrancy law and a disarmament act for the suppression of brigandage. By a decree of the Court of Appeals all clubs, hotels, lodging-houses, and places of amusement were declared to be subject to police regulation and supervision. Europeans protested against this decision and against the new professional tax. The Legislative Council passed the acts asked for by Mr. Scott and Col. Kitchener, including measures giving the police more power for the investigation of crime, punishing vagrants and able-bodied beggars, regulating by license the carrying of fire-arms, enforcing work and discipline in prison, giving single judges jurisdiction in minor cases, and providing for speedy trials and the execution of sentences.

The Occupation of Tokar.—In 1888 a strategic advance was made beyond the boundary at Wady Halfa, and since then the Egyptian Government has held a part of the Dongola district. A second and more significant move toward the reconquest of the Soudan was carried out in February, 1891, from Suakin, the Egyptian base on the Red Sea coast. The Arab robbers and slave dealers, who profited by the state of anarchy that for some ulterior motive the English Government promoted in the eastern Soudan, and who were known collectively as Osman Digma's dervishes, although their relations to that chieftain were not known, and it was not even certain that he was still alive, recommenced their depredations on Jan. 27, 1891, by carrying off cattle from under the very walls of the forts at Suakin. The raiders were pursued and beaten, and the Governor-General took the opportunity to begin the advance that had been planned. On the next day a force of Soudanese infantry and Egyptian cavalry captured, after some resistance, the town of Handoub, the nearest base from which the rebels have been permitted for years to defy the Egyptians and plunder friendly natives. This place was occupied and fortified, and on Feb. 3 the Arab irregulars in the Egyptian service pushed on to Tamai. Re-enforcements were drawn from the Nile frontier, and Sir F. W. Grenfell went to Suakin to direct the operations against Tokar, which was the objective point of the advance, being a fertile and populous district in the midst of the desert, the possession of which has enabled the hostile Arabs to continue their harassing operations in this region. A force of 2,000 Egyptian and Soudanese troops was landed at Trinkitat. On Feb. 16 they began the march through the desert to El Teb, which was occupied without fighting. At daybreak on Feb. 19 they advanced on Tokar, where they first saw the enemy. The Egyptian troops pushed on quickly, and succeeded in gaining possession of the ruined Government buildings. The dervishes secured the shelter of some of the other houses, and endeavored to surround the Arab position. At one time Osman Naib, the dervish commander, almost succeeded in gaining the rear of the Egyptian line with his cavalry, while his infantry kept up a determined attack in front on the center. The better arms and training of the troops told heavily against the Arabs, who numbered 2,000 in the fighting line and as many more in reserve. When they were driven out of the houses with severe losses the fight was virtually won, and at noon, after a

stubborn battle lasting an hour and a half, they were completely defeated and put to flight. The dervishes had been disposed so as to give battle from the cover of a thick wood, but the Egyptians flanked them by the quick march on the buildings, and thus spoiled Osman Digma's plan of battle. In the repeated assaults on the Egyptian position 700 dervishes were killed, and many more were shot during the retreat. Nearly every emir fell on the field of battle. The Egyptians took the rebel camp, with tents, stores, arms, and banners, 4 guns and much ammunition in the arsenal at Tokar, and 2 more guns, with supplies of various kinds, at Afaft, a large town 4 miles beyond Tokar, which was deserted at the approach of the troops. The Egyptians, who were commanded by Col. Holled Smith, lost an English officer, Capt. H. L. Barrow, and 12 soldiers killed, and another Englishman, Capt. J. R. Beech, and 4 Egyptian officers wounded, with 42 Egyptian soldiers. The dervishes were all members of distant tribes, Bagurras or Djaalin. In the district were found abundant growing crops, *dhurra* or sorghum and cotton. The conquered district of Tokar was placed under an Egyptian civil governor and under the military command of Capt. Hackett Pain, who had a garrison of 1,500 men at Afaft, with detachments at El Teb, Fort Dolphin, and Trinkiat. The hostile tribes on the coast took advantage of a general amnesty proclaimed by Gen. Grenfell before leaving Suakin on March 8, except 300 persons who were arrested and kept as prisoners or deported to Lower Egypt. The Soudan contains 14,125,000 feddans of cultivable land, of which only 212,418 feddans were cultivated in 1887. The most fertile part is the region of the Atbara and the Nile tributaries of Abyssinia and the affluents of the Blue Nile, where there are three months of rainfall, a soil containing the same constituents that enrich the delta, and a climate extremely favorable to the ripening of wheat and other cereals and of cotton, which is indigenous to the country and comes to maturity when there is no rain nor dew. The recapture of Tokar is supposed to be intended as a counterstroke to an Italian occupation of Kassala, confirming the Egyptian claim and the English reversion of the whole of the eastern Soudan. The power of the Khalifa or Mahdi, who has his seat at Omdurman, the political and spiritual chief of Osman Digma and his hordes in the western Soudan and the equatorial regions, is declining before the purely religious influence of the son or sons of Sidi Mohammed ben Ali el Snussi, whose residence is in the convent of Djarabub, in the western part of the oasis of Jupiter Ammon. The heir or heirs to the older Mahdi or final Mohammedan prophet can not come into actual conflict with the successor of the Don-gola Mahdi, because the Snussi are a religious order possessing small material means and no armed forces. Their teachings had penetrated all the oases west of Egypt, the whole region south of Tripoli, and the kingdoms of northern Central Africa as far as the Senegal some years before Abdallah ben Mohammed ben Achmed proclaimed himself Mahdi at Dongola in 1883, and in Wadai, Daxfur, and Kordofan the followers of Sidi Mohammed Snussi have counteracted and effectually excluded the power of the Don-

gola Mahdi. In Algeria and Morocco the Snussi have not been able to gain a firm foothold, because in those countries the powerful order of Muley Thaib is established, the chief of which, Sidi el Sladj Abd es Ssalm, pretends to be the most direct descendant of the Prophet. When the Mahdists were driven out of Tokar the Italians were notified at Massowah, because Osman Digma was reported to have retired to Kassala. Afterward he was heard from in Omdurman, where he took counsel with the Mahdi.

EVANGELICAL ASSOCIATION. The following is a summary of the statistics of this Church as they were published in September, 1891: Number of itinerant preachers, 1,227; of local preachers, 619; of members, 150,234; of Sunday schools, 2,535, with 28,613 officers and teachers and 177,639 pupils; of catechumen classes, 761, with 9,514 pupils; baptized during the year, 2,390 adults and 9,833 children; 2,062½ churches, having a probable value of \$5,168,210; and 699½ parsonages, valued at \$873,058. Amounts of benevolent contributions: For conference claimants, \$8,825; for the Missionary Society, \$134,443; for the Sunday-school and Tract Union, \$2,445; for the Orphan Home, \$533. The controversy in this association, of which an account was given in the "Annual Cyclopaedia" for 1890, has continued, and has resulted in the meeting of two bodies, each claiming to be the General Conference, and in the division of the Church. A General Conference representing the majority party (recognizing Bishops Esher and Bowman) met at Indianapolis, Ind., Oct. 1. It was supported by a large majority of the annual conferences as well as of the church members, and was recognized by all the boards and officers of the Church. The place of meeting was designated by a committee which the previous General Conference, failing to name the place, although it appointed the time for the meeting, had authorized to select the place. All the general officers of the Church but one (Bishop Dubs) and representatives of all the annual conferences but two were present. The conference was opened with an address in German by Bishop Esher. A temporary chairman was appointed preliminary to making the usual inquiry into the character of the bishops. The trial and suspension of Bishop Dubs were reported. Bishops Bowman and Esher made statements respecting certain disorders that had occurred at conference meetings growing out of the divisions in the Church and the charges against them, and their cases were referred to a committee for examination. This committee reported that the preliminary examination by three elders, on which they had been acquitted, and which they held, rendered nugatory their subsequent trial and condemnation, constituted a legal bar to further proceedings; and therefore, that the subsequent trial and suspension of those bishops were invalid. The report was unanimously adopted. The trial of Bishop Dubs was found by the committee appointed to examine the record to have been regular and the charges to have been sustained; and the conference, upon its recommendation, declared him deposed from his office as bishop and preacher and expelled from the Church. Bishops Esher and Bowman were re-elected bishops for another term of four years,

and the Rev. S. C. Breyfogel and the Rev. W. Horn were elected additional bishops. An appellate court was constituted, to be composed of fifteen members chosen by the general conference from thirty candidates nominated by the bishops. An order was adopted condemning the formation of a general conference by the minority party as a violation of the letter and spirit of the laws and usages of the Church and a grave offense against it; and declaring that "all persons who have heretofore actively supported, and now are actively supporting or participating in, such disorganizing movements have thereby thrown off their allegiance to our Church and have disenthralled themselves to any of the privileges of membership therein until, upon reformation, they have been duly readmitted"; and "that no preacher so acting heretofore is qualified to vote at any annual conference or to officiate as a preacher without being received anew after reformation and accepted in due form by some duly constituted annual conference of the Church." The Board of Bishops was given power, by an amendment to the "Discipline," to decide by a majority of votes all disputed questions of Church law, their interpretations to be binding upon all preachers and members of the Church. Presiding elders were authorized and directed during the interims of General Conferences to take steps to prevent ministers of the minority party from performing any official actions in any of the churches under their jurisdiction. An order was passed under which ministers and members of churches who adhere to the minority organization shall be regarded as having by that fact withdrawn from the Church, and their names shall be stricken from the roll. Steps were taken looking to the introduction of lay delegation in the General and annual conferences. The mission in Japan was constituted into an annual conference. A report on the proposition to submit the difficulties in the Church to arbitration was adopted unanimously, though the subject had not been formally presented to the Conference. It declared that there existed neither occasion nor ground for such a compromise; that if a wrong had been committed on the part of the majority, it only had to be proved to have it corrected according to the Word of God, "for to compromise between right and wrong would be treason and sin: that it would be a sign of weakness calling in question the right of assistance for the Church with its excellent discipline to submit the adjustment of its affairs to an outside board of arbitrators; that if each member was faithful to his obligations as such, and each preacher obeyed his ordination vows, all occasion for compromise would at once cease; and that the behavior of the minority was such that their proposals of compromise were a "sacriligious mockery," bore "the stamp of hypocrisy and deceit," and deserved no further attention.

General Conference of the Minority.—The General Conference of the minority party, which sustains Bishop Dubs, met in Philadelphia, Oct. 1. Its claim to legal constitution was based on a clause in the Discipline directing that when the General Conference and the bishops fail to appoint the time and place of the next session, the oldest annual conference shall do so. Holding that in view of this clause the General

Conference had no right to delegate the appointment to a commission, the East Pennsylvania Conference, as the oldest, named Philadelphia as the place of meeting, and the designation of Indianapolis by a committee of the former General Conference was regarded as invalid. There being, by reason of the suspension of Bishop Dubs, no bishops present authorized to act, the Rev. C. S. Haman was elected chairman. No delegates were present from seventeen of the annual conferences and none of the *ex officio* members of the conference. Bishop Dubs was invited to present the case of his trial and suspension before the General Conference for review. The cases of Bishops Bowman and Esher were also reviewed, but in their absence. The proceedings in the trial of Bishops Esher and Bowman were approved, and they were declared deposed and expelled, while the verdict in the case of Bishop Dubs was reversed, and he was reinstated in his episcopal and ministerial relations. Bishop Dubs was elected for another term, and the Rev. C. S. Haman and the Rev. W. M. Stanford were chosen additional bishops. Persons were chosen to fill all the official positions of the church which were under the control of the majority party, including the editorships of the official papers, their salaries to begin when they enter upon the discharge of their duties. The report on the state of the Church embodied a review of the transactions that had led to the division as viewed from the side of the minority party, and action was taken upon all the questions at issue with a view to establishing the lawfulness of the position of the minority. A measure of lay delegation was adopted, to be recommended to the annual conferences. *Ex officio* membership in the General Conference was abolished.

Laymen's Conventions.—Laymen's conventions met in connection with both general conferences. The Hon. W. Grote, of Elgin, Ill. was chosen president of the convention of the majority party at Indianapolis, and Mr. Isaiah Bower, of Pennsylvania, of that of the minority party in Philadelphia. Fraternal greetings and expressions of a desire for peace were exchanged by telegraph between the two conventions. The first message was sent by the convention of the minority to that of the majority, and embodied a unanimous request that the laymen of the majority would join those of the minority "in recommending to our present difficulties by arbitration by disinterested Christian brethren of other denominations, and save our beloved association from total disruption." The majority convention replied: "Dear brethren, we are yours for peace and unity, and shall be glad to give our influence to any measure looking to that end (the settlement of difficulties) which is in accordance with our Discipline and the Word of God." The minority convention responded proposing the names of eleven men of eminence in their several denominations and of recognized positions before the public as arbitrators. To this the president of the convention at Indianapolis answered that the convention had adjourned and many of the delegates had gone home. He had talked with some privately, and the opinion was that the proposition of the minority convention was not in accordance with the Discipline.

EVENTS OF 1891. The year opened with the Indians of the Northwest in armed revolt, but they all surrendered before the middle of January. The most considerable war of the year was that in Chili, which began on Jan. 7 and ended in August with the complete triumph of the popular party. The Government of the United States was obliged to take a firm stand with Chili because of an attack upon American sailors in Valparaiso. England by force of arms subdued a formidable revolt in her Indian possessions, and was very near hostilities with Portugal about certain conflicting claims in Africa. Apart from these the actual and possible wars of Christendom have been immaterial. Diplomatic negotiations of considerable moment have resulted in reciprocity treaties of great commercial importance between the United States and many foreign countries, and the threatened difficulties with England regarding the Bering Sea have been happily adjusted. The list that follows embraces only such occurrences as are held to be of somewhat general interest. More detailed accounts will be found under the proper headings, alphabetically arranged, in the body of the book.

January 1. Baltimore, Md.: Roman Catholic Memorial Church of Corpus Christi consecrated by Cardinal Gibbons. Pittsburgh, Pa.: Strike of 500 Hungarian steel workers, 3,000 men out of work in consequence. Africa: Germany takes formal possession of her new territory.

2. Washington: A. L. Drummond, of New York, appointed chief of the Treasury Secret Service.

4. Ireland: The Viceroy issues a declaration regarding a famine in the western counties.

5. Fight with Indians near Pine Ridge agency. Supreme Court: Henry B. Brown, of Michigan, takes the oath as Associate Justice. Scotland: Fight between railway strikers and police at Motherwell.

6. Scotland: Continued encounters between strikers and the authorities at Glasgow.

7. Gen. Miles's forces surround the hostile Indians in Pine Ridge reservation. Secretary Tracy relieves Commander Reiter of his ship on account of the Barundia affair. Meeting of International Monetary Conference in Washington. Chili: Balmaceda assumes the dictatorship and part of the navy revolts.

8. Lieut. Casey killed by Indians at Pine Ridge.

9. Rochester, N. Y.: The great shoe strike declared off.

10. France: The Irish Nationalist leaders hold a conference at Boulogne. France: The new Government loan promptly taken.

11. Hostile Indians, 3,000 strong, approach Pine Ridge with a view to surrender. Mahoning Valley, Ohio: Sixteen blast furnaces shut down, 10,000 men out of work; object, to force railroads and coke companies to reduce prices.

12. Canada brings suit before the United States Supreme Court *in re* seizures of vessels in Bering Sea. San Francisco: St. Mary's Cathedral dedicated.

13. California: Leland Stanford (Rep.) re-elected United States Senator.

14. Conference of Indian chiefs with General Miles at Pine Ridge; they agree to surrender.

15. Scottish railway strikers try to wreck a train near Greenock.

17. George Bancroft dies at Washington, aged 91 years; flags on all Government buildings are placed at half-mast until after the funeral.

19. General Miles officially announces the Indian outbreak at an end and congratulates his troops. A British squadron ordered to Chili.

20. Kalakaua, King of Hawaii, dies at San Francisco. Governors are inaugurated in several States. United States Senators elected: Connecticut, Orville H. Platt (re-election); New Hampshire, Dr. J. H.

Gallinger (Rep.); North Carolina, Zebulon B. Vance (re-election). Texas: Fifteen masked men wreck and rob a train near Brownsville. Washington: Meeting of the United States Potters' Association. Baltimore: Annual Convention, American Brotherhood of Steamboat Pilots. French war ships sent to Chili.

21. Gov. David B. Hill (Dem.), of New York, elected United States Senator. The following-named Senators are re-elected: Henry M. Teller (Rep.), of Colorado; Daniel W. Voorhees (Dem.), of Indiana; J. D. Cameron, of Pennsylvania; W. C. Squire, of Washington; James K. Jones (Dem.), of Arkansas; George G. Vest (Dem.), of Missouri. New York: Fortieth annual meeting of the American Society of Civil Engineers. The Hon. John Lothrop succeeds Judge Devins in the Supreme Court of Massachusetts.

22. England: Parliament reassembles. Russia: The Tsar expels Hebrews from Moscow.

23. North Dakota elects the Hon. H. C. Hansbrough (Rep.) United States Senator. Belgium: Prince Baudouin, the heir-apparent, dies suddenly. Brazil: A new ministry is formed.

24. Boston: Centennial celebration of the Massachusetts Historical Society.

26. Spain agrees to a reciprocity treaty between the United States and Cuba. A delegation of recently hostile Indian chiefs selected to visit Washington. Chili: The insurgents bombard Coronel.

27. Wisconsin: Ex-Secretary Vilas (Dem.) chosen United States Senator *vice* John C. Spooner (Rep.).

28. Connecticut: The Legislature declares that there was no choice of State officers in the late election save in the case of the Comptroller. Oberlin College: William Gay Ballentine elected president. Kansas: The Legislature elects William A. Peffer (Farmers' Alliance) to be United States Senator *vice* John J. Ingalls.

29. Death of William Windom, Secretary of the Treasury. Nevada: Senator J. P. Jones re-elected. Chili: Iquique recaptured by the Government forces.

31. United States steamer Newark accepted by the Navy Department. Portugal: Three regiments of the line revolt at Oporto, mutiny quelled by loyal troops. France: Death of Meissonier, the artist. Caroline Islands: Natives attack the Spanish garrison, 90 killed.

February 1. Alabama: Race riot at Carbon Hill, troops called out, 4 negroes killed.

2. Washington: The Supreme Court decides that it has jurisdiction in the case of the schooner Sayward. Spain: A general election results in Conservative victory; rioting at Barcelona.

3. Canada: Parliament dissolved on the reciprocity question.

4. Ohio: Charles F. Thwing installed President of Western Reserve University. Italy: A Cabinet crisis, Gen. Viss summoned by the King to form a new ministry.

5. The President signs a reciprocity treaty with Brazil. Maine: Keels of two new United States cruisers laid at Bath. New York: Strike of 1,500 cloak-makers.

7. Washington: Conference with Sioux chiefs at the Interior Department.

9. Connellsville, Pa.: Strike of 10,000 miners. Strike on the Pittsburg and Western Railroad. Italy: New Cabinet sworn in by the King.

10. Strike of 300 men on the Pittsburg and Western Railroad. The courts in St. Louis decide that certain clubs in that city are illegal as regards the liquor law.

11. Idaho: Judge William H. Claggett chosen United States Senator. Washington: Close of the conference with the Sioux delegation.

12. England: Messrs. Dillon and O'Brien surrender to the police at Folkestone on their arrival from France. Kearney, N. J.: Strikers' riot at the Clark Thread Works.

13. Washington: Death of Admiral David Dixon Porter.

14. New York: Death of Gen. William Tecumseh Sherman.

15. Carlisle, Pa.: A delegation of Sioux chiefs visits the Government Indian schools. Fall River, Mass.: A compromise ends the weavers' strike at the Cornell Mill.

16. South Dakota: I. H. Kyle elected United States Senator.

17. Arlington, Va.: Interment of the late Admiral Porter. Providence, R. I.: Meeting of the National Electric Light Association. Caroline Islands: A Spanish force repulsed by natives, losing 120 men.

18. Minnesota: The American Base-ball Association withdraws from the national agreement.

19. New York: Funeral obsequies of Gen. Sherman. England: The House of Commons rejects a motion for disestablishment in Wales. Egypt: Osman Digma defeated at Tokar.

21. Idaho: The Legislature passes an "Australian" ballot bill. Rhode Island: Charles H. Page elected Member of Congress. Egypt: Battle with Osman Digma's forces near Tokar, the Egyptians victorious.

22. 28. Washington: Meeting of the Women's National Council, Frances E. Willard, President.

23. (Monday). General celebration of Washington's birthday. Kansas City: Meeting of delegates favoring a general federation of labor. Resignation of the Norwegian Cabinet. Formation of a new Serbian ministry.

24. Oklahoma Territory: Large immigration of negroes from Arkansas.

25. United States of Brazil: Gen. de Fonseca elected President.

26. Nebraska: Passage of a strict maximum freight bill. Chili: Capture and pillage of Iquique by the Congressional party. England: Launch of two men-of-war at Portsmouth; the Queen names them Royal Arthur and Royal Sovereign. Ireland: Trial of "Tim" Healy's libel suit against the Inexpressible begins at Dublin, with accompanying riots.

27. Washington: Henry W. Blair, of New Hampshire, appointed minister to China, Truxton Beale, of California, minister to Persia, and Morton A. Knapp, of New York, Interstate Commerce Commissioner.

28. Satisfactory test of the new gunboat Bennington. England: Fight with strikers at the Albert Docks, several killed.

March 2. Centenary of John Wesley's death; Methodists celebrate the event all over the world; a statue in his honor is unveiled in London; Archdeacon Farrar, of the Church of England, makes the address. Roman Catholics celebrate the eighty-first birthday of the Pope. Providence, R. I.: Strike of 800 weavers because of reduced wages.

3. Washington: Gold medal of the Life-saving Service awarded to Capt. Alfred Mitchell, of Buffalo, for gallantry in saving the crew of the steamer Annie Young in October, 1890. One hundredth anniversary of the approval by Washington of the act authorizing a mint at Philadelphia. The President signs an act authorizing a new mint building in the same city. Chili: A detachment of Government troops desert and join the Congressional forces.

4. Washington: Adjournment of the Fifty-first Congress *sine die* by limitation of its term; the Copyright bill was passed among its last acts.

6. Pennsylvania: The Monongahela Valley coal-miners' strike for fair wages ends in a victory for the strikers. Army: Enlistment of 2,000 Indians authorized by the Secretary of War. Navy: Official acceptance of United States cruisers San Francisco and Philadelphia. Alabama: Raid of Government officers; arrest of 30 "moonshiners." Africa: A German expedition under Baron von Wissmann nearly exterminates a native tribe. Chili: Bloody battle fought, Congressional troops victorious.

7. The President appoints James H. Beatty to be district judge for Idaho. Rochester, N. Y.: Lockout of clothing manufacturers, affecting many thousand people. Indianapolis: 1,500 carpenters idle because

of the Building Trades Council. Chili: Government troops defeated at Pozo Almonte.

8. Washington (State) appropriates \$100,000 for the Columbian Exhibition. Africa: 900 natives killed by a French expedition on the Niger.

9. France accepts the invitation to participate in the Columbian Exhibition. Jamaica, L. I.: Polish cloak-makers attack their employer, throwing vitriol.

11. Illinois: John M. Palmer (Republican) chosen United States Senator *vice* Farwell. Kilgore, Ky.: 6 men killed and several wounded at a dance. Washington: 2 battalions (colored) of the National Guard disbanded because Congress failed to make an appropriation for armories.

12. Providence, R. I.: Strike of 800 weavers against alleged excessive fines for imperfect work. England: The House of Commons votes a large credit for the famine in Ireland.

13. California: Anti-Chinese bill passed by the lower house (see article on CALIFORNIA); vote, 49 to 5. New Orleans: The jury fails to convict a number of Italians accused of the murder of Chief of Police Hennessy; popular indignation at alleged miscarriage of justice.

14. New Orleans, La.: 11 Italians, believed to belong to the murderous "Mafia" society, lynched in the parish prison. Bridgeport, Conn.: P. T. Barnum presents a building to the historical and scientific societies of the city.

15. The Italian minister officially protests against the New Orleans lynching. California: Funeral of the late Senator Hearst at San Francisco. Ireland: Election fight at Newry.

16. The Rev. Howard MacQueary (Presbyterian), of Canton, Ohio, found guilty of heresy. Newburgh, N. Y.: Dedication of a monument, known as the Tower of Liberty, built by Government and State aid.

17. Conversation by telephone between London and Paris. Death of Jerome Napoleon, Bonapartist heir to the crown of France. His second son, Louis, is designated by will as head of the house of Bonaparte.

20. Indianapolis: The strike of journeyman printers ends in compromise. Philadelphia: Keystone National Bank closed by the Comptroller of the Currency.

21. Oxford defeats Cambridge in the annual boat race on the Thames, England. Newfoundland: Great excitement and indignation against the proposed action of the English Parliament. Washington: Death of Gen. Joseph E. Johnston, late Confederate States Army.

24. Maine: The Legislature adopts an "Australian" ballot system. The republic of Honduras agrees to participate in the Columbian Exposition.

25. Great Britain accepts the President's invitation to participate in the Columbian Exposition.

26. California appropriates \$800,000 for the Columbian Exposition.

27. Chicago: Strike ends by agreement between the boss carpenters and journeymen through a conference committee.

28. Holyoke, Mass.: Chinese students assaulted by a mob.

30. India: Nearly 500 native troops in the British service have been killed by insurgents. Connellsville, Pa.: Coke strikers destroy the company's property.

31. Italy indicates her feeling in the matter of the New Orleans lynching by recalling Baron Fava, minister resident at Washington.

April 1. Rhode Island State election: No choice in many cases of officers and legislators. Maine: Passage of a strict law regarding liquor traffic. New Hampshire appropriates \$40,000 for the Columbian Exposition. Chili: Elections result in a Liberal victory.

2. Connellsville, Pa.: Fight between coke strikers and deputy sheriffs, 11 killed, 40 wounded.

3. Pennsylvania: Two regiments of the National Guard on duty at Connellsville to suppress rioting. Washington: Strike of journeyman printers for increase of wages.

4. Arkansas and Maine: State Legislatures adjourn.

5. San Francisco: Chinese merchants formally pro-

test against the appointment of Mr. Blair as minister to China.

6. New York: Journeymen painters strike for eight hours and \$3.50 a day. Kirtland, Ohio: Thirty-ninth annual conference of the Reorganized Church of Latter-Day Saints. New York: The Methodist Episcopal Conference votes against the admission of women as delegates. India: Revolt against British rule in the Punjab. Bridgeport, Conn.: Death of P. T. Barnum (see OBITUARIES).

8. Washington: Opening of the centennial celebration of the Patent Office. Lynn, Mass.: Strike of the morocco workers ends in defeat. Marion, Ind.: Strike of tramway employes for better wages. New Hampshire: Passage of "Australian" ballot law by the State Senate. Indiana: Prof. Coulter appointed President of the State University. Cambridge, Mass.: The Harvard overseers vote against shortening the university course.

9. Kansas: Two towns have elected women as police justices. Pennsylvania: Several deputy sheriffs arrested on charges of murder at the coke riots of April 2. India: British troops under Lieut. Grant defeat a force of insurgent Manipuris.

10. Washington: Formation of a National Association of Inventors. New York city: Celebration of the fiftieth anniversary of the New York "Tribune." Pittsburg, Pa.: The convention of miners and operators fails to agree as to the eight-hour question. Washington: Lorenzo Crounse, of Nebraska, appointed Assistant Secretary of the Treasury. A company of surveyors sails for Central America to examine the route to connect North and South America by rail.

11. Kentucky: Adjournment of the State Constitutional Convention. New Hampshire: Adjournment of the State Legislature. Chili: Successes reported on the part of the Congressionalists.

13. Burlington, Iowa: Saloon keepers resist the execution of the liquor law. The "grip" is epidemic in the United States as well as in Europe and Great Britain. England: Riotous weavers at Bradford are dispersed by troops.

14. Pennsylvania: The Lower House passes an "Australian" ballot bill. Turkey: A Russian warship with railroad materials and workmen for the Black Sea is stopped at the Dardanelles. The President leaves Washington for a trip through the Southern States.

15. The President visits Chattanooga and Atlanta. Secretary Tracy inaugurates a system of civil-service reform in the navy yards. Chili: The Congressional troops defeat a Government force at Copiapo.

16. The President is well received on the route through Alabama.

17. Rhode Island: Justice Charles Matteson is elected Chief Justice by the State Legislature.

18. The President reaches Galveston, Texas, and is received by the authorities. Pennsylvania: Fight between coke strikers and sheriff's posse. Newark, N. J.: Strike declared off in the Clark Thread Works, most of the men resume work.

20. Army: Col. A. V. Kantz promoted brigadier-general *vice* Gibbons, retired. Africa: A British steamer was fired upon by the Portuguese.

21-24. Washington: Annual meeting of the National Academy of Sciences.

21. Cincinnati: Annual meeting of the League of Republican Clubs. The President at El Paso, Texas; Mexicans join Americans in the reception. London: Mutinous conduct in the Grenadier Guards. Africa: Natives in Portuguese Guinea revolt and raise the French flag. Navy: Commander Reiter, disciplined because of the Barrundia affair, is restored to duty in command of the Thetis. The President passes through Tucson, Arizona, to Los Angeles, Cal. Connellsville, Pa.: More fighting in the coke region.

22. New Orleans: A general strike ordered of the building trades unions. Detroit: Traffic almost entirely suspended on the tram lines, owing to the strike of the employes. James S. Clarkson chosen President of the Republican National League.

23. Detroit: The tram-car strikers successfully defy the police, rails are torn up in various parts of the city. Chicago: A strike of laborers at the World's Fair site ends. Chili: The Government suffers a defeat at Iquiqui. Wisconsin appropriates \$65,000 for the World's Fair.

24-26. Scranton, Pa.: Convention of the International Young Women's Christian Association.

24. Germany: Death of Count Von Moltke (see OBITUARIES). India: The Manipuri insurgents are subdued by the British and severely punished. Portugal accedes to England's ultimatum in regard to the African question. Washington: Meeting of managers of National Homes for Disabled Volunteer Soldiers; General W. B. Franklin chosen president.

25. The President reached San Francisco. Detroit: The tramway strike ends with mutual consent to arbitration. Employes of the Michigan Car Works (Detroit) strike for shorter hours. Chili: The Congressional man-of-war Blanco Encalada blown up by a torpedo, 200 killed.

26. Washington: Secretary Noble appoints a commission to adjust differences between the Indians of South Dakota.

27. The President reviews the school children of San Francisco and the detachment of regulars of the Presidio garrison. New York: Ground broken for the foundation of the Grant monument. The Southern Memorial Day was observed by survivors of the Confederacy.

28. China formally objects to the Hon. Henry W. Blair, as minister from the United States. Washington: Forty-fifth annual meeting of superintendents of asylums for the insane. India: British forces have entered Manipur after sharp fighting.

29. New York: Organization of American tin-plate manufacturers. Denver, Col.: A verdict of "not guilty" returned in the Millington murder case, one of the most noted trials ever held in the West.

30. The President arrived at Monterey. Hartford, Conn.: Congress of the American Sons of the Revolution. The Rev. Phillips Brooks, D. D., chosen Protestant Episcopal Bishop of Massachusetts. Canada: Opening of the Dominion Parliament.

May 1. Riotous labor agitation expected throughout Christendom and repressive measures taken where possible. Many strikes for higher wages in this country, but only one riot (at Cleveland). In Europe troops were called out in Italy, France, and elsewhere. The President returned to San Francisco. Another Russian man-of-war stopped at the Dardanelles.

2. The President entertained at a banquet at San Francisco. Washington: Annual meeting of the American Academy of Medicine. Europe: Labor riots in Belgium and France. Chili: The Congressional party have secured control of eight provinces and organized a government. Italy: A "green book" has been issued on the New Orleans lynching. London: Naval exhibition opened by the Prince of Wales.

4. The President sails for Oregon. Two coke strikers killed by deputy sheriffs in the Connellsville region. Pennsylvania: Celebration of the one hundredth anniversary of the arrival of the first Polish immigrants.

5. The President is received at Salem and Portland, Ore. Nebraska: The Supreme Court (State) decides in favor of Thayer, the Republican claimant of the Governorship.

6. San Diego, Cal.: Steamer Itata seized by the United States marshal at the request of the Chilean minister. Kansas City: Twenty-ninth Convention of the Young Men's Christian Association. Pittsburg: The National Convention of Machinists votes to exclude negroes from membership.

7. San Diego: The Chilean steamer Itata puts to sea carrying the United States deputy marshal. The President begins his return journey to the eastward over the Northern Pacific Railroad. Honduras: An insurrection announced.

8. The President visits the State capital of Idaho. Philadelphia: Failure of the Spring Garden National

Bank and the Pennsylvania Safe Deposit Company. Trenton: The potters' strike ends in compromise. Birmingham, Ala.: Forty-sixth annual session of the Southern Baptists. Italy addresses a circular letter to the European powers in regard to the New Orleans lynching.

3. The United States cruiser Charleston sails in pursuit of the Chilean steamer Itata. The President visits Salt Lake City, Utah. Germany: Adjournment of the Reichstag. Opening of the German Exhibition in London.

10. California: Schooner Robert and Minnie seized by a United States marshal off San Pedro; she is charged with having delivered arms to the Itata. Honduras: Suppression of the attempted revolution.

11. Richmond: Memorial services held in honor of the Confederate dead at Oakwood cemetery.

12. Buffalo, N. Y.: Opening of a new political club house, "The Cleveland Democracy"; an address was made by ex-President Cleveland. Philadelphia: Annual meeting of the Catholic Knights of America. Japan: The Russian Czarewitch attacked and wounded by a supposed maniac. Much financial excitement in the European exchanges.

13. The President speaks at Hastings and Omaha. New York: The American Bible Society celebrates its seventy-fifth anniversary. Indianapolis: Eighteenth annual conference of Charity and Correction Associations. Columbia, S. C.: Celebration of the one hundredth anniversary of the first State Legislature. Serious native revolt in Dutch Guiana. Anti-European riots in China. Anti-Hebrew riots in Corfu. Egypt: A new ministry formed.

14. Diocesan convention of the Protestant Episcopal Church at Suwanee, Ga., the Rev. Thomas F. Gaylor chosen Bishop of Georgia. Tennessee: Failure of the People's Bank at Knoxville. Louisville, Ky.: Annual meeting of the Scotch-Irish Society. China accepts the President's invitation to participate in the World's Fair.

15. The President returned to Washington after his trip to the Pacific coast.

16. Chicago: The Supreme Council of the United Order of Trainmen meets to consider the strike in the Northwest. Boston: Meeting of the Oriental Society. Trotwood, Ohio: Annual meeting of the Dunkards from all parts of the United States.

17. Navy: Rear-Admiral McCann placed in command of the South Pacific Squadron.

18. New York: It is decided to open the Metropolitan Museum on Sundays. Louisville, Ky.: Sixth annual meeting of the Benevolent and Protective Order of Elks. Cincinnati: Opening anniversaries of the Baptist societies. Army: Silver life-saving medal given to Corporal Curtis Harrison for gallant conduct in rescuing several persons from drowning in Red river, Texas.

19. Denver: Sessions of the Transmississippi Congress begun. New York: Annual meeting of the Institute of Electrical Engineers.

20. Orange, N. J.: Meeting of representatives of women's clubs.

21. Washington: The President opens to settlement about 1,600,000 acres of the Fort Berthold Indian reservation, South Dakota. Detroit: The Presbyterian General Assembly convenes, one hundred and third annual meeting. Vienna: Opening of the International Postal Congress.

23. Africa: Encounter between English and Portuguese colonists at Delagon Bay.

24. Grand Army posts attend Memorial Sunday services throughout the United States.

26. Boston: Sixty-sixth annual convention of the American Unitarian Association. Baltimore: Consecration by Bishop Paret (Protestant Episcopal) of the Mother House of "All Saints Sisters of the Poor." Tallahassee, Fla.: Wilkinson Call (Democrat) re-elected United States Senator. France: Riotous strike of stage drivers in Paris. England: Steps have been taken looking to compromise in the Newfoundland fisheries question.

27. Columbus, Ohio: The Farmers' Convention repudiates the sub-treasury scheme. Labor societies: The Switchmen's Union withdraws from the federation because of the Northwestern strike. Pittsburgh: The Reformed Presbyterian Church begins its sessions (sixty-second synod). Navy: The Charleston reaches Cadix without having seen the Itata.

28. Pennsylvania: Adjournment of the Legislature. Washington: Organization effected of an "American University." Navy: Lieut.-Com. Bicknell found guilty of negligence in the loss of the Galena. South Africa: An encounter between British and Portuguese forces on the Bembé river; the British are victorious.

29. Detroit: The Presbyterian General Assembly disapproves the appointment of Prof. Briggs in Union Theological Seminary.

30. Memorial Day observed as a holiday throughout the United States; a Grand Army post mobbed at Whitesville, Ky. Intercollegiate athletic games: Harvard wins the Berkely cup. Hayti: A revolution breaks out in Port au Prince.

31. New York: First Sunday opening of the New York Museum of Art, 10,000 visitors.

June 1. England: Opening of the "baccarat trial," involving the Prince of Wales and others of the aristocracy.

2. Detroit: Adjournment of the Presbyterian General Assembly. French cruisers interfere with fishermen in Newfoundland.

3. Galena, Ill.: Bronze statue of Gen. Grant unveiled, presented to the city by H. H. Kohlsaat, of Chicago. Jackson, Mississippi: Monument unveiled in memory of Confederate soldiers. Maryland: Monument dedicated in memory of Leonard Calvert, first Governor of the State. It stands on a promontory of St. Mary's river. Washington: A committee of the Seventh New York Regiment presents a medal to the President commemorating the centennial of Washington's inauguration. Asbury Park, N. J.: The General Synod of the Reformed Church in America opens its annual session. Lake Mohonk, N. Y.: Second annual meeting of the Negro Conference, ex-President Hayes chairman.

4. Chili: The transport Itata surrenders to the United States squadron at Iquique. New York: The directors of Union Theological Seminary resolve to support Prof. Briggs.

5. Washington, Ind.: Six hundred striking miners resume work, agreeing to abide by arbitration. London: The Bering Sea bill passed the House of Commons. Norristown, Pa.: Monument to Gen. Hartranft unveiled. Brooklyn, N. Y.: Monument to J. S. T. Stranahan unveiled.

6. New York: During the week ending this day 17,166 immigrants landed in this port. St. Louis: corner-stone laid of a new city hall. Canada: Death of Sir John Macdonald. (see OBITUARIES).

8. Boston: Thirty-ninth annual convention of the International Typographical Union. Hayti: Massacres of opponents of President Hyppolite.

9. Fort Wayne, Ind.: General convention of railway employes, representing the principal protective associations. Buffalo: Unitarian conference of the Middle States and Canada. Chili: Engagement off Iquique, Government vessels driven off. London: Strike of omnibus drivers adjusted by compromise. Cincinnati: Convocation of Roman Catholic bishops.

10. Grand Rapids, Mich.: Riotous strike of tramway employes. Buffalo: Annual convention of the American Protestant Association (membership 100,000). Fredericksburg, Va.: Monument unveiled to the memory of the Confederate dead. Canada: Funeral of Sir John Macdonald at Ottawa.

11. Commencement exercises at Johns Hopkins University and many other schools and colleges. England: The Bering Sea bill is approved by the Queen. End of the baccarat trial, the Prince of Wales severely criticised.

12. Army: The graduating class of the Military Academy receives its diplomas.

15. The President proclaims a close sealing season in Bering Sea. The diplomatic correspondence published.

16. Ohio: State Republican Convention meets at Columbus; William McKinley, Jr., nominated for Governor. Anniversary of the Battle of Bunker Hill celebrated in Boston, and by the Sons and Daughters of the Revolution in Brooklyn, N. Y. Pensacola, Fla.: Dedication of a monument to the Confederate dead. Canada: A new ministry formed, with J. J. C. Abbott as Premier.

18. The President and his family go to Cape May for the summer. Commencement exercises at Cornell, Colgate, Dickinson, and other colleges. Wisconsin: The Rev. Isaac L. Nicholson, D. D., of Philadelphia, elected Bishop of Milwaukee (Protestant Episcopal). Bering Sea: Three British cruisers co-operate with the American squadron in protecting the seal fisheries. London: The Government was defeated in a vote on the factory bill.

20. Chili: Government troops desert to the Congressional party. Chicago: Strike of architectural iron workers. Announcement of a customs league between Germany, Austro-Hungary, Italy, and Switzerland.

22. Labor riots in France and Hungary.

23. Texas: Rain-making experiments under the management of the Agricultural Department. Commencement exercises at Harvard, Yale, Wellesley, Amherst, Dartmouth, and other colleges.

24. Brooklyn: Bronze statue unveiled of Henry Ward Beecher. Fordham, N. Y.: Statue unveiled of Archbishop Hughes at St. John's College. Otumwa, Ia.: The Democratic State Convention renominates Gov. Boies.

26. Harvard defeats Yale in the annual boat race at New London.

27. The one hundred and thirteenth anniversary of the Battle of Monmouth celebrated on the battle-field by the Sons of the Revolution. Pittsburg: Strike of stone masons ends, 500 men returning to work at the old rates. China: A considerable fleet of European gunboats is gathering to protect foreign residents. Chili: Commanders of United States vessels are notified that it is unsafe for American sailors to go ashore, owing to the lawless state of affairs.

29. A lake mysteriously appears in the lowlands of the Colorado desert. Prince George of Greece arrives at Chicago.

30. Washington: The Weather Bureau is transferred to the Agricultural Department. Canada: The widow of Sir John A. Macdonald has been raised to the peerage.

July 1. The President announces that Great Britain, France, Belgium, and Switzerland have taken action regarding the Copyright act. Ohio: 2,000 coal miners strike in the "railroad mines" for nine hours a day and the "Columbus scale"; 600 mill hands at Cleveland strike for the "amalgamated scale." Colorado: The Pike's Peak Railroad is opened for passenger traffic. Birmingham, Conn.: St. James's Episcopal Church celebrates its one hundred and fiftieth anniversary; a tablet was unveiled in honor of the Rev. Richard Mansfield, D. D., rector for seventy-two years (1748-1820). Canada: Dominion Day observed throughout the province.

2. Washington: W. E. Simonds, of Connecticut, appointed Commissioner of Patents, *vice* Mitchell, resigned; A. L. Snowden, of Pennsylvania, minister to Greece; R. Pacheco, of California, minister to Guatemala; Alexander Walker, United States marshal for New York (eastern district). Chili: The Congressional army occupies Huasco. Prince George of Greece is loyally welcomed by Greek residents of New York.

3. Buffalo: Meeting of the Society of the Army of the Potomac. Frederick Douglass resigns his post as minister to Hayti. The Emperor of Germany touches at the Hague and Rotterdam, and sails for England.

4. Independence Day celebrated in all parts of the United States and in many foreign countries. Prince George of Greece sails for Europe. England:

The German Emperor is received in state by the Prince of Wales at Sheerness, and by the Queen at Windsor.

5. W. K. Vanderbilt's yacht *Alva* rescues the crew of a wrecked schooner near Newport. England: The Emperor of Germany reviews the household troops.

6. Steubenville, Ohio: Convention of American glass workers; one of the largest labor parades ever held. England: Marriage, at Windsor Castle, of Princess Louise of Schleswig-Holstein and Prince Aribert of Anhalt.

7. Four murderers executed by electricity at Sing Sing, N. Y. Chicago: More than 1,000 delegates meet, representing young people's societies of the Baptist denomination.

8. The Secretary of the Treasury has accepted \$500 from the Itata for violation of the navigation laws. Holland: Resignation of the Cabinet. Africa: Arab slave traders routed by Congo Free State troops.

9. Washington: Prof. T. C. Mendenhall appointed Superintendent of the Coast and Geodetic Survey. A second libel suit filed against the Itata for violation of the neutrality laws. Lookout Mountain, Tenn.: Session of the Southern Educational Society.

10. The Squadron of Evolution has a sham battle in Boston harbor, the Massachusetts Naval Reserve participating.

11. Minneapolis: Conference of Christian Endeavor Societies. England: The German Emperor reviewed regular and volunteer troops at Wimbledon. Representatives of the New York Athletic Club break a record at the games of the London Athletic Club.

12. Minneapolis: Fourteen thousand delegates present at the reunion of Christian Endeavor Societies.

13. Navy: The White Squadron leaves Boston for New York. Boston: The Socialistic Labor party is forbidden to meet on the Common. France: President Carnot is fired at by a lunatic in Paris; the French navy manœuvres in the Gulf of Lyons and makes a practice attack on Toulon. England: The German Emperor leaves for Scotland.

14. Toronto, Ontario: Annual convention of the National Education Association of the United States. London: Opening of the International Congregational Council. Buffalo: Annual meeting of the Photographers' Association of America. California: Cargo of the Itata libeled at San Diego. Salt Lake City: Meeting of the Afro-American League. Scotland: The German Emperor inspects the Forth Bridge and sails for home. France: Anniversary of the fall of the Bastille celebrated throughout France. Chili: Naval engagement off Valparaiso, the Congressionalists victorious.

16. France: The Chamber of Deputies passes the act admitting American pork. England: The Society of Authors celebrates the adoption of the American Copyright act.

17. Railroads in the southeastern Mississippi valley form an association.

20. Bryceville, Tenn.: An organized body of nearly 1,000 miners overawe the militia guard and compel the withdrawal of the convict miners.

21. Lexington, Va.: A statue unveiled of Gen. Stonewall Jackson, late Confederate States Army; 15,000 Confederate veterans present; Gen. Early delivered the oration.

22. Allegheny, Pa.: Strike of the steel workers ends on the company's terms. London: Mutinous conduct of the Coldstream Guards.

23. Southampton, Mass., celebrates the one hundred and fiftieth anniversary of its incorporation. Judge Cox, of the United States Circuit Court, decides that the Brush Electric Company practically holds a monopoly of the storage-battery business. It is announced that France will return Russian flags captured in the Crimean War.

24. Dr. William R. Harper is appointed principal of the Chautauqua system.

25. Barnstable County, Mass.: Reception and banquet to ex-President Cleveland at Sandwich. Sandy

Hook, N. J.: Successful trial of smokeless powder with heavy guns.

26. France: Attempted assassination of officials by means of infernal machines.

27. London: The Lord Mayor entertains the American World's Fair delegates at a dinner.

28. Washington: Senator Quay resigns the chairmanship of the Republican National Executive Committee and Col. Dudley resigns the treasurership. Maryland: Prohibition State Convention held at Glenndon. Strike of switchmen on the "Big Four" railroads ends in failure. Saratoga, N. Y.: Annual meeting of the Paper Manufacturers' Association.

August 1. Washington: Reciprocity treaty with San Domingo made public. Switzerland: Six hundredth anniversary of National independence.

3. Kentucky: State election carried by the Democrats. The World's Fair Commission reaches Berlin.

4. Detroit: Twenty-fifth annual reunion of the Grand Army of the Republic; about 40,000 men present for parade. Utah: First election under national party lines; result close, but slightly in favor of Democrats. Ocean Grove, N. J.: Quarter centennial of the Freedmen's Aid and Southern Education Society (Methodist).

5. The White Star steamer *Majestic* broke the ocean record from Queenstown to Sandy Hook; time, five days, eighteen hours, eight minutes. Kentucky: The new Constitution adopted by nearly 100,000 majority. Washington: Twenty-first annual convention of the Catholic Total Abstinence Society. Boston: Convention of the Army and Navy Union. Detroit: Ninth annual meeting of the Woman's Relief Corps, Grand Army of the Republic. St. Louis: Third annual meeting of the Letter Carriers' Association. Chautauqua, N. Y.: Opening of the annual assembly.

6. Nantasket Beach, Mass.: Meeting of the National Bar Association. Capt. John Palmer, of Albany, elected commander-in-chief Grand Army of the Republic.

7. Two vessels seized in Bering Sea for unlawful sealing.

10. London: International Congress of Hygiene and Demography opened. Berne, Switzerland: International Geographical Congress begins its session.

11. Washington: Fourteenth annual meeting of the Society of Microscopists. Shasta, Cal.: Secret-service officials break up illicit opium works managed by Chinamen. Springfield, Mass.: Meeting of the National Association of Fire Engineers. Gettysburg, Pa.: Fourth annual convention of the Patriotic Sons of America. Canada: Charges of corruption in the Department of Public Works; Sir Hector Langevin denies the charges and resigns.

12. Cambridge, Mass.: Death of James Russell Lowell. Cleveland, Ohio: The Association of Factory Inspectors, United States and Canada, holds its fifth annual meeting. Washington: Annual meeting of Agricultural Colleges and Experiment Stations.

13. Burmah: The Senaputty of Manipur hanged by order of a British court of inquiry.

19. Bennington, Vt.: Battle monument transferred to the State with imposing ceremonies; speeches by the President and others. Washington: Meeting of the American Association for the Advancement of Science. The Teutonic runs from Queenstown to Sandy Hook in five days sixteen hours thirty-one minutes, beating all previous records. St. Louis, Mo.: National Convention of Railway Postal Clerks. England: The French fleet arrives at Cowes.

20. Milwaukee, Wis.: Cardinal Gibbons delivers the pallium to Archbishop Katzer with great ceremony.

21. The President visits Saratoga, N. Y. England: Review of French and English fleets by the Queen off Cowes.

24. Washington, D. C.: Meeting of the Society of Geologists. Africa: Defeat of dervishes by Emin Pasha. Peru: Cabinet crisis; the ministry resigns.

Vermont: The Governor appoints Redfield Proctor to succeed Mr. Edmunds in the United States Senate.

25. The President visits St. Albans, Vt., making several speeches on the way.

26. The President makes addresses at Richmond, Waterbury, Montpelier, Plainfield, and St. Johnsbury, Vt. Boston: Meeting of the American Bar Association. Ocean Grove: Camp meeting, 20,000 people on the ground. End of strike on the Lake Erie and Western Railway and at Peoria, Ill. Minneapolis: Meeting of Sons of Veterans.

27. The President makes speeches at Bellows Falls and elsewhere in Vermont.

28. Chili: Valparaiso surrenders to the Congressional forces; American, English, French, and German forces assist in preserving order.

29. Coal-miners strike at Duquoin, Iowa, ended by mutual agreement after lasting five months.

31. Chili: Santiago taken by the Congressionals; flight of Balnaceda; the war practically ends. Saratoga, N. Y.: Meeting of the American Social Science Association. Tennessee: Extra session of the Legislature to consider the convict system. A Russian man-of-war permitted to pass through the Dardanelles.

September 1. China: Anti-foreign riot at Tehang, the British consulate and the American missionary house destroyed. Another riot at Lung-Chow. Reciprocity with Spain goes into effect. Kentucky: Gov. Brown inaugurated at Frankfort. Chicago: Union cabinet makers strike for eight hours a day. Train robbed by seven masked men near Cotopaxi, Cal.

2. State Prohibition Convention of New York meets at Albany. Meeting of National Columbian Commission in Chicago.

3. Hamilton College: Horace B. Silliman chosen president. Gettysburg: Three monuments dedicated to Illinois regiments. Austria and France: Autumnal army manoeuvres begun.

4. Chili: A provisional government formed with Jorge Montt as President. The President appoints John S. Durhan, of Pennsylvania, to be minister to Hayti *vice* Frederick Douglass, resigned.

5. Germany removes restriction on the importation of American pork. Creedmoor, N. Y.: The New York team wins the Interstate Rifle Match.

6. Colored cotton pickers organize in Texas to secure better pay.

7. The President officially recognizes the new Government of Chili. England: Trades Union Congress opens at Newcastle. The Hague: Opening of International Agricultural Congress. General Alihanoff arrested in Afghanistan as a Russian spy.

8. Groton, Conn.: Celebration of the one hundred and tenth anniversary of the Battle of Groton Heights. Denmark removes prohibition against the importation of American pork. The City of New York breaks the record of quick trips to the eastward; Japan mails reach Queenstown in twenty days from Yokohama.

9. New York: State Republican Convention meets at Rochester. Strike of freight conductors, Louisville and Nashville Railroad.

10. National Association of Railway Postal Clerks meets at Watertown, N. Y. China: Anti-American riot at Tehang. International Electrical Convention in Montreal closes.

12. Emily Huntington Miller chosen Principal of the Women's College, North Western University.

13. The Pacific mail steamer *China* reaches San Francisco in twelve days eleven hours fifty-five minutes from Yokohama.

14. St. Louis, Mo.: Meeting of the Brotherhood of Telegraphers. Indianapolis, Ind.: Meeting of the Coopers' International Union. A British force lands on the Turkish island of Mitylene, causing much excitement throughout Europe.

15. New York: State Democratic Convention meets at Saratoga. Florida: R. H. M. Davidson appointed United States Senator *vice* Call, deceased. Washington: The President returns from Cape May. The United States Veterinary Association meets.

Utah: Meeting of the Irrigation Congress at Salt Lake City, 800 delegates present. Mexico: Meeting of Congress. Holland: Opening of Parliament.

16. New York: State Democratic Convention at Saratoga. Francis Hendricks appointed Collector of Customs at New York. Massachusetts: Republican Convention at Boston. Montreal: Meeting of the Brotherhood of Locomotive Engineers. France and Italy recognize the Provisional Government of Chili.

17. Columbus, Ohio: Meeting of the Society of the Army of the Cumberland. The steamship Fuerste Bismark reduces the record from New York to Southampton by 5 minutes.

18. Nebraska: State Democratic Convention at Grand Island.

19. Opening of the St. Clair river tunnel. Hamilton, Ohio, celebrates its one hundredth anniversary. The Pope receives a deputation of French workmen, and addresses them on the labor question. Suicide of Balmaeda, the deposed President of Chili.

21. Great Britain, France, Germany, and the United States agree to enforce the protection of foreigners in China. Saratoga, N. Y.: National Conference of Unitarians. St. Louis: Meeting of the Order of Odd Fellows.

22. Washington: Meeting of the American Association of Inventors and Manufacturers. Meeting of the American Pomological Society. Congress of American Physicians and Surgeons. Troy, N. Y.: National Council of United American Mechanics. Great Britain recognizes the Provisional Government of Chili. Oklahoma: New lands opened to settlers.

24. The Porte addresses a circular letter to the European powers regarding the Dardanelles incident. China: A fleet dispatched to the scene of late riots. Nebraska: Republican State Convention meets at Lincoln.

26. Tennessee: Determined revolt of convicts at Bryceville.

27. Bohemia: The Austrian Emperor visits Prague. Missouri: The village of San Antonio plundered by robbers.

29. England: Five bishops consecrated in St. Paul's Cathedral, London. Steamship Teutonic reaches Queenstown in five days sixteen hours thirty-one minutes from New York.

30. Savannah, Ga.: General strike of wharf laborers and others; higher pay demanded. Belgium: Gen. Boulanger commits suicide near Brussels. Canada: Parliament prorogued.

October 1. Raleigh, N. C.: Southern Interstate Exposition opened. California: A new university, named after Leland Stanford, Jr., opened at Palo Alto. Pottsville, Pa.: Dedication of a soldiers' monument. Pittsburg, Pa.: General strike of railroad coal miners. Chicago: Convention of the International League of America. Snow falls in the northern United States and British possessions.

2. Rome: French pilgrims desecrate Victor Emmanuel's tomb, and are mobbed for the act. Venezuela: Congress passes a bill of rights.

3. Harrisburg, Pa.: Thirty-fourth Annual Convention of the National Local Preachers' Association.

5. Galesburg, Ill.: Meeting of the Brotherhood of Railway Trainmen; 400 delegates present. Kingston, N. Y.: Mob violence threatened against the wreckers of a local savings bank; the militia called out.

6. Washington: Meeting of the Society of the Daughters of the Revolution, Mrs. Harrison presiding. Pittsburg, Pa.: Tenth annual convention of the Order of United Friends; delegates from 19 States. Glen Summit, Pa.: Twentieth annual convention of the American Institute of Mining Engineers. England: Death of Charles Stewart Parnell, the Irish leader (see OBITUARIES).

7. Washington: Opening of the Methodist Ecumenical Council. Chicago: Equestrian statue of Gen. Grant unveiled. Cornell University: Opening of new library buildings given by Henry W. Sage and ex-President White.

8-20. Washington: Ecumenical Council of the Methodist Episcopal Church.

8. Indianapolis: German Evangelical Congress in session. Ada, Ohio: Joint debate between Major McKinley and Gov. Campbell. Chicago: Meeting of the Society of the Army of the Tennessee; Gen. T. M. Dodge chosen president.

9. Indian conference at Lake Mohonk.

10. Pittsburg, Pa.: Annual Congress of the National Prison Association. Brazil: Rioting at Rio de Janeiro.

11. Italy: A party of 6 Austrians attacked by a mob in Pisa; 1 supposed to be killed.

12-16. Pittsfield, Mass.: Meeting of the American Board of Commissioners for Foreign Missions.

12. Washington: The Supreme Court meets for the October term. Montevideo: A revolt quelled by troops; several insurgents killed.

14. Massachusetts: Consecration at Boston of Phillips Brooks as Protestant Episcopal Bishop of the State. Reading, Pa.: National encampment of the Union Veteran Legion. Evansville, Ind.: First meeting of the National Waterways Commission. Salem, Mass.: End of the Searles-Hopkins will case, involving several millions of dollars.

15. Buffalo, N. Y.: Annual convention of the Council of the Evangelical Lutheran Church. Boston: Meeting of the Supreme Lodge (colored) Knights of Pythias.

16. Pittsburg, Pa.: Annual convention of the missionary societies of the Church of the Disciples of Christ.

17. Chili: Sailors of United States steamer Baltimore attacked in Valparaiso; 2 killed, 18 hurt.

18. Washington: Corner-stone laid of the Roman Catholic Church of the Holy Name; Home and Bible College for Missionaries dedicated. Brooklyn, N. Y.: Beecher Memorial Church dedicated.

20. Cincinnati: Annual meeting of the United Typhothetæ of America. Kansas City: Annual meeting of the American Public Health Association. Allegheny, Pa.: Annual convention of the Foreign Christian Missionary Society. Russian war-ships launched at Cronstadt, commemorating the anniversary of the battle of Navarino.

21. Atlanta, Ga.: Unveiling of the Grady Monument. Worcester, Mass.: Biennial convention of the Universalist Church. Chili: General election; Liberal victory.

22. Omaha, Neb.: Transmississippi Congress. Pittsburg, Pa.: Meeting of the Women's Christian Missionary Association.

23. Sioux Falls, N. Dak.: Indictment of officers of the Louisiana Lottery under United States law.

24. Washington: Manuel I. Morales presents his credentials as minister from Salvador. United States cruiser Boston sails from New York, bound for Chili.

26. Washington: Secretary Blaine resumes his duties at Washington; an explanation demanded from Chili regarding the attack on United States seamen (Oct. 11). Dublin, Ireland: Office of the "National Press" maliciously wrecked by the explosion of a bomb.

27. New York: The Court of Appeals decides the Tilden will case in favor of the heirs.

28. Chili replies to the inquiry of the United States regarding the affair at Valparaiso (see Oct. 17). Señor Pedro Montt is recognized by the President as representing the Provisional Government of Chili. Baltimore: Launch of the United States steam cruiser Detroit. Boston: The Massachusetts Supreme Court sets aside the decree expelling Dr. E. C. S. Smythe from Phillips Academy. Annual convention of the American Institute of Architecture. England: Incipient mutiny among the household troops, London.

29. Richmond, Va.: Statue unveiled of Gen. William Carter Wickham, late Confederate States Army. Bucksport, Ark.: Fight at a political meeting, 5 killed, several hurt. Cork, Ireland: Desperate street fights between opposing political factions.

30. Bryceville, Tenn.: 300 convicts set free by riotous miners. Madagascar: A French officer and 8

soldiers murdered by natives. Scotland: Mr. Balfour elected Chancellor of Edinburgh University.

21. Washington: The President and Mrs. Harrison give a reception to the Women's Missionary Society.

November 1. Boston: Failure of the Maverick National Bank, liabilities about \$8,000,000. Africa: Encounter between British and Portuguese troops near Delagoa Bay. Several killed. Russia: The ukase prohibiting export of grain goes into effect.

2. Augusta, Ga.: Opening of the Southern States Exposition. Bryceville, Tenn.: 200 more convicts set free by riotous miners (see Oct. 30).

3. Elections in Colorado, Iowa, Massachusetts, Maryland, Michigan, Mississippi, Nebraska, New Jersey, New York, Ohio, Pennsylvania, South Dakota, and Virginia (for details, see articles under the individual States).

4. New York: Presbytery dismisses the charge of heresy against Prof. Briggs. Case appealed to General Assembly. Vermont: Gov. Page announces the appointment of the Hon. Redfield Proctor as United States Senator, *vice* Edmunds, resigned. China: Revolt in the province of Fukien. Ireland: Political mass meeting at Waterford, 150 hurt.

5. The Secretary of War resigns to become Senator from Vermont. Pittsburg District, Pa.: Miners stop work to compel recognition of the Miners' Union. Los Angeles: The Itata case submitted to the United States Court. Columbus, Ohio: Meeting of the General Church Extension Committee (Methodist). Washington, D. C.: Annual assembly International Christian Workers.

6. Pittsburg, Pa.: 800 iron workers strike against increase of hours without additional pay.

7. Corry, Pa.: National Bank fails, liabilities, \$740,000. Ireland: The McCarthyites carry the Cork election by 1,512 plurality.

8. Chicago: Demonstration in honor of the Anarchists executed four years ago.

9. Washington: Opening of the Sayward case in the Supreme Court.

10. Washington: It is announced in the Supreme Court that arbitration has been agreed upon between the United States and Great Britain in the Sayward case.

11. Chili: The Provisional Government formally surrenders its powers to Congress. Cleveland, Ohio: Methodist Missionary Society meets at Cleveland. Boston: Convention of the Women's Christian Temperance Union. New Orleans: Seventeenth annual meeting of the American Bankers' Association. Springfield, Ohio: Convention of the National Grangers' Association. Washington: Reception by the President of delegates to the Fraternal Congress.

12. Bordentown, N. J.: Dedication of a monument to commemorate the first railway train run in New Jersey. Washington: The President receives the commander-in-chief and officers of the Grand Army of the Republic.

13. The President proclaims Nov. 26th as Thanksgiving Day. Brazil: Revolt in the province of Rio Grande do Sul. Russia: Arrest of 60 conspirators for favoring a representative government.

14. The President officially receives Señor Pedro Montt, minister from Chili. Stronghurst, Ill.: Discovery of natural gas.

15. France: General strike of miners in the northern provinces.

16. Indianapolis: General meeting of farmers' organizations. New York: Dr. Briggs's case appealed to the General Assembly of the Presbyterian Church.

17. Washington: Meeting of the Episcopal Congress. France: Riots among the striking miners. Germany: Meeting of the Reichstag.

18. Denver: The Mining Congress begins its sessions, 10,000 delegates present. Indianapolis: Meeting of the Farmers' Alliance; no money for expenses in the treasury; decreased membership reported. Toledo: General assembly of the Knights of Labor adjourns. Washington: Session of the Episcopal Church Congress. Brazil: Signs of revolt in some of the provinces.

20. Augusta, Ga.: Meeting of the Southern Manufacturers' Association. Chicago: Meeting of the Railroad Conductors' Association. Russia: The Government will lend the Central Famine Committee fifty million roubles (\$38,000,000).

21. Yale defeats Harvard in the annual football match at Springfield, Mass. New York: Formal complaint made against the decision of the Presbytery in the Briggs case. Indiana: About 400 miners are now on strike.

22. France: The striking miners are becoming riotous.

24. The Republican National Convention is called for June 7, 1892, at Minneapolis.

25. Brazil: An extra session of Congress summoned to meet Dec. 18. Paris: Meeting of the International Immigration Conference.

26. Thanksgiving Day: In the great annual football match at New York Yale defeats Princeton (19 to 0), and holds the championship. England: The law officers have decided that the Newfoundland bait act is unconstitutional.

28. Augusta, Ga.: Close of the exposition. Football between representative teams from West Point and Annapolis; West Point wins (32 to 16).

29 (Sunday). New York: A lunatic attempts to shoot Dr. John Hall in front of his church. The Cherokee Council agrees with the United States commissioners to sell the Cherokee strip for \$8,700,000. China: Imperial troops defeated by rebels.

30. St. Louis: Roman Catholics celebrate Archbishop Kenrick's fiftieth episcopal anniversary. Brazil: The province of Rio Grande do Sul refuses to recognize the Government at Rio de Janeiro. France: The strike of coal miners ends with compromise.

December 1. Conclusion of a commercial treaty between Germany and Belgium.

2. Navy: Launch of United States steam cruiser New York (8,150 tons) from Cramp's ship-yard, on the Delaware river. Virginia: Meeting of the State Legislature. Arizona: Adoption of a new Constitution by a general vote.

3. China: The rebels are said to have been defeated in two considerable engagements by the imperial troops.

4. New York: A lunatic enters Russell Sage's office, demands \$1,250,000, and, being refused, sets off high explosives carried in a handbag. The lunatic and a bystander are killed; many hurt and the building wrecked. Paris: Death of Dom Pedro, ex-Emperor of Brazil.

5. Washington: Secretary Proctor leaves the War Department. Navy: Launch of United States steam cruiser Montgomery (2,000 tons) at the Columbian Iron Works' ship-yard, Baltimore.

7. Washington: The Hon. Charles F. Crisp, of Georgia (Democrat), nominated for Speaker of the House on the thirtieth ballot in caucus.

8. Navy: Launch of United States steam gunboat Machias from the Bath Iron Works, Maine. Switzerland: Dr. Welti resigns the presidency of the republic.

9. Canada levies duties on fish from Newfoundland, and retaliatory duties are at once levied on Canadian goods. France demands reparation from Brazil for 12 Frenchmen killed in Rio by Fonseca's agents.

10. Brazil: A revolt reported in Campos against the Peixoto Government.

11. England: Lord Dufferin appointed minister to France, *vice* Lytton, deceased. China: It is announced that the late insurrection is put down.

13. Bridge of the Norfolk and Western Railway near Cincinnati opened for traffic. Waterford city, Ireland: Fierce fight of political factions; Michael Davitt hurt.

14-19. Birmingham, Ala.: Eleventh annual convention of the American Federation of Labor.

14. Brazil: Revolutionary outbreak in the province of São Paulo.

15. Washington: Reciprocity arrangements with Jamaica completed. Ireland: Election fight at Ennis; John Dillon hurt.

16. Washington: The President nominates judges for the new United States circuit courts, namely: William L. Putnam, of Maine; Nathaniel Shipman, of Connecticut; George M. Dallas, of Pennsylvania; Nathan Goff, of West Virginia; William H. Taft, of Ohio; William A. Woods, of Indiana; and Warren Truit, of Oregon. Louisiana: The anti-lottery and pro-lottery Democrats hold State conventions. Kansas City: Meeting of the Missouri River Improvement Congress; \$6,000,000 a year wanted for the Missouri and \$7,000,000 for the Mississippi. Canada: The Quebec Cabinet dismissed from office by the Lieutenant-Governor. Germany: The Reichstag passes the commercial treaty with Austria.

17. Washington: Stephen B. Elkins nominated to be Secretary of War, *vice* Proctor, resigned. Philadelphia: Dedication of the Drexel Institute of Art, Science, and Industry.

18. Colorado: Troops ordered to Crested Butte to prevent conflicts between miners and strikers.

19. Brazil: A revolt in Pernambuco results in the killing of about 60 persons. Revolutionary movements in Bahia and Guatemala.

20. Washington: Reciprocity treaties signed with Salvador and Guatemala. Philadelphia: Business meeting of the National Conference on University Extension. It is reported that the Messiah craze has broken out afresh among the Cheyennes and Arapahoes.

21. Washington: A reciprocity treaty signed with Costa Rica; presentation of the new French Minister, M. Patenotre. Texas: A raid has occurred of disaffected Mexican troops under Garza into United States territory, where they are strong enough for the time to defy the small border garrisons of regulars.

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FARMERS' CONGRESS. The tenth annual session was held in Council Bluffs, Iowa, in 1890. Among the resolutions passed was the following, which settled the much-discussed question of the national floral emblem:

Resolved, By the National Farmers' Congress of the United States of America, that we adopt and declare the Golden Rod as the national floral emblem of the United States of America, and the same shall be so considered and recognized on and after the passage of this resolution, and that the secretary of the Congress be instructed to forward a copy of the same to the President of the Floral Association at Athens, Ala., to the President of the National Floral Association, and to the leading florists of the United States.

The eleventh annual session met at Sedalia, Mo., Nov. 10 to 12, 1891, and was welcomed by an address by Hon. D. R. Francis, Governor of the State; Hon. Charles Carroll, acting mayor of the city; and Hon. Frank D. Meyer, President of the City Commercial Club; to which responses were made by Hon. A. W. Smith, of Kansas; Col. Daniel Needham, of Boston, Mass., President of the New England Agricultural Association; and Hon. Benjamin F. Clayton, secretary of the Congress. Moore's large opera house was filled throughout the entire session. Many able speeches were made touching the productive and industrial interest of the country. Among the notable were those of Hon. William Freeman, of Maine; Hon. W. Pope Yeaman, of Missouri; Morris Mohler, Secretary of Kansas State Agricultural Fair; and Hon. J. M. Stahl, editor of the Quincy, Ill., "Call." The running debates were freely participated in by Congressman Foley, of Missouri, Joshua Wheeler, of Kansas, Hon. Richard Dalton, of Missouri, Senator H. L. Burkett, of Mississippi, and others. At the biennial election of officers, Hon. A. W. Smith, of Kansas, was made President; D. G. Purse, of Savannah, Ga., Vice-President; Hon. William Freeman, of Maine, Treasurer; Hon. Benjamin F. Clayton, of Iowa, Secretary; Harry C. Brown, of Atlanta, Ga., First Assistant, and J. M. Kelley, of Iowa, Second Assistant Secretary. The following resolutions were adopted:

We, the delegates of the National Farmers' Congress of the United States, appointed and commissioned by the governors of the several States in this the eleventh annual session at Sedalia, Mo., on this the 12th day of Nov., 1891, do declare the following

questions touching the agricultural and productive interest of the United States to be such as demand attention at the hands of the Congress of the United States, and we deem it to the best interest of the whole people that such laws will be enacted as will carry into effect those principles.

That the prosperity of the people depends to a great extent upon the uniformity and equality of the laws, both State and national, and that the laws should be so framed that no class or set of men should derive advantages and benefits at the expense of or to the detriment of the masses of the people.

That the President of the United States should be elected by the direct and popular vote of the people, and that United States Senators should be elected by the direct vote of the people of the several States.

That we demand that national taxation be limited to the wants of the Government economically and honestly administered.

That we respectfully ask of the Congress of the United States the enactment of such laws as will prevent the manufacture and sale of all compounds or substitutes as lard that may come in competition with pure lard produced from the farm, unless the same be distinctly marked and branded as such, showing the ingredients of which such compounds or substitutes are composed.

That we demand of our United States Congress the passage of such laws as will effectually prevent the buying and selling of agricultural and mechanical products with the sole view of settling the difference of price between the market value of such products at the time of purchase and the time of the contract delivery.

Certain associations known as live-stock exchanges have practically taken possession of the live-stock market of Chicago, St. Louis, Kansas City, and Omaha, and such associations by their rules prohibit organized producers of live stock from co-operating to market their stock through their own agent and deriving the profits of the business, largely diminishing the enormous commission charges. Therefore, it is to the interest of the business of selling live stock and for the benefit of the producer we earnestly recommend the legislatures of the States in which said live-stock associations are located to enact such laws as will effectually prohibit live-stock associations or other combinations from adopting rules which will prevent free competition in the sale of live stock.

That the National Farmers' Congress in session at Sedalia, Mo., does fully acquiesce in and indorse this great undertaking by the Board of Directors, and by the United States Commission of the World's Columbian Exposition as appointed by the President of the United States, in their united labors to bring the great undertaking to a full fruition.

That the National Farmers' Congress, composed of

representatives from the several congressional districts of the United States, is in full sympathy with this great undertaking to bring together the industrial enterprises of the civilized world in one great exposition, where may be shown the progress made in science, the arts, manufactures, literature, education, inventions, and agriculture from the earliest times, and especially since the last great Paris Exposition.

That this Congress is heartily in favor of the systematic and thorough improvement of our means of water transportation by the National Government, and we urge upon the Congress of the United States the importance of liberal appropriations for this purpose.

That while the Farmers' Congress does not approve of lavish expenditures of public money by the Government, it recognizes the importance of making the arid lands of the Western States and Territories available for settlement by means of irrigation from artesian wells, storage reservoirs, and canals, and we would therefore request Congress to make sufficient appropriations for making surveys and experiments that will demonstrate the practicability and probable cost of the different systems in the regions needing irrigation.

Believing that the future introduction abroad of corn product as human food will be of great benefit to the farmers of the United States in the increased demand for that important cereal, and while we congratulate the Secretary of Agriculture of the United States on his course in this matter, we urge that such additional help be appointed as will make the work more extended and complete, and we respectfully ask that the Congress of the United States make such additional appropriations as will thoroughly demonstrate the practicability of the experiment.

That we believe that the interest of the whole people can be the better subserved by the extension of free mail delivery in the rural districts than by the reduction of letter postage; therefore, we urge upon our Senators and Representatives in Congress the further extension of this branch of the mail service.

That we approve and commend the principles included in what is known as reciprocity.

That Hon. J. M. Rusk, Secretary of Agriculture of the United States, is entitled to and has the approval and thanks of this the eleventh annual session of the National Farmers' Congress of the United States in convention assembled at Sedalia, Mo., for the faithful, courteous, and diligent discharge of the duties of that office in behalf of the agricultural interests of the country.

FINANCIAL REVIEW OF 1891. The political, financial, and commercial history of the year presents some very unique features. Nearly all the chief states of South America were affected by revolutionary movements. A revolt of the Brazilians against the dictatorial policy of President Fonseca resulted in his resignation and the installation of Vice-President Peixoto as his successor. An uprising of the Chilians, instigated by the Congressional party, ended in the overthrow of President Balmaceda. Toward the close of the year a rebellion in China was suppressed only by the most vigorous measures on the part of the Government. There were at intervals troubles of a serious character in Spain and Portugal. The declaration by Emperor William of Germany of the *driebund*, or union for offensive and defensive purposes between that country, Austria, and Italy, very naturally excited all Europe and induced Russia to make an alliance with France. The political tension among the European nations was so great that the visit of the Emperor William to England, the rendezvous of the French fleet in the harbor

of Cronstadt, and the failure of the Czar to meet the German Emperor, each in turn gave rise to grave apprehensions concerning the peace of Europe; and Berlin and Vienna were on one occasion panic stricken by an exaggerated report of a remark to a Polish deputy by the Emperor of Austria in which he referred to the strained relations with Russia. The landing of a company of British sailors on the island of Mitylene, in the Aegean Sea, and reports that the fortification at Sigri had been occupied, gave a shock to every European center until the incident was officially explained; but it served to call attention to the importance of this island as a strategic point, commanding, to a certain extent, the entrance to the Dardanelles, and it also elicited from the Porte a statement of his reasons for permitting vessels of the volunteer service of Russia to pass into the Black Sea. The concentration of Russian troops on the German and Austrian frontiers tended to keep the military authorities of those countries on the alert, and furnished material for alarming reports at intervals. The expulsion of Jews from Russia, accompanied, as it was, by relentless persecutions, excited the sympathy of the civilized world, and induced the leading Jewish bankers of Europe to retaliate by refusing to assist Russia in her financial negotiations. Early in April the Rothschilds, who had agreed to float a new loan for that country, notified the Russian Finance Minister that such was the feeling of the great banking houses of Europe against Russia, on account of her persecution of the Jews, that the loan could not be satisfactorily placed, and therefore they would be compelled to cancel their contract. Russia had at that time on deposit in London, Paris, Berlin, and Frankfort about £22,500,000, nearly half of which was subject to withdrawal on short notice. This fact and an intimation that a portion of the balance would be required induced the leading bankers of Europe to prepare to meet the demand, and accordingly gold was gathered from all possible sources. By directly or indirectly paying a premium therefor the banks of England, France, and Germany obtained large supplies from the United States, and the movement continued almost uninterruptedly until August. The withdrawals of gold by Russia from the European centers were comparatively small, and part of the metal was returned to London in July. There was a French loan for 868,750,000 francs issued in January. In February the German Government successfully placed a loan for 400,000,000 marks, and in the same month the Bank of England returned to the Bank of France the £3,000,000 borrowed during the Baring crisis in November, 1890. On March 6 the London market was disturbed by the financial panic in Buenos Ayres, and on the 12th there was a semi-panic at Paris due to the embarrassments of the Société des Dépôts et Comptes Courants, but the Bank of France and a syndicate of bankers promptly came to the assistance of the Société. On the 27th the Bank of Leghorn and a large commercial house in that city suspended, but further trouble was averted. In May the prospect of the withdrawal by Russia of part of her balance caused a financial crisis in Paris, during which Russian's fell sharply. On July 18 the

failure of the London Bank of the Rio Plate caused a flurry which, however, soon subsided. On Aug. 28 the news of a decisive battle at Valparaiso in which the revolutionists were successful, thus ending the war in Chili, imparted a firmer tone to all South American securities in London. On Sept. 13 the Mitylene incident above referred to temporarily affected the London, Paris, and Berlin bourses. In October a French syndicate undertook to place a Russian loan for 500,000,000 francs. It met with opposition from Berlin and London, and it was only partially successful, the syndicate taking the greater portion of it, thereby subsequently becoming embarrassed, and in the following month a decline in Russian securities, which it was feared would involve the syndicate in heavy losses, caused a very uneasy feeling in Paris. Toward the end of the month it was announced that the Russian Finance Minister had agreed to let about 200,000,000 francs of the loan remain until a more convenient season, and this relieved the situation. Commercial affairs in Great Britain and on the Continent were more or less disturbed during the year by the operation of the new American tariff. The prohibition by Russia of exports of wheat and rye excited the grain markets abroad and stimulated the movements of cereal products from America to Europe. There was a general deficiency of grain crops on the European Continent and almost an unprecedented yield of wheat, corn, and oats in this country, making our economical conditions surpassingly excellent. The export of breadstuffs to Europe during the last half of the year were enormous, although checked at intervals by speculation, by a scarcity of cars to move

the grain from the West to the seaboard, and by an insufficient supply of vessels for transportation of breadstuffs to Europe. Our cotton crop was large, and as there was an unusually heavy yield in the previous season the supply was in excess of the demand, and in the South Atlantic States there were some sections where the price was so low as not to remunerate the producers.

The following tabular survey of the economical conditions and results of 1891, contrasted with those of the preceding year, is from the Commercial and Financial Chronicle:

ECONOMICAL CONDITIONS AND RESULTS.	1890.	1891.
Coin and currency in the United States, Dec. 31.....	\$1,712,220,917	\$1,748,684,894
Bank clearings in the United States.....	\$60,829,090,000	\$56,636,886,237
Business failures.....	\$189,866,964	\$189,868,618
Imports of merchandise (year).....	823,307,726	828,312,646
Exports of merchandise (year).....	857,502,548	970,062,822
Gross earnings 148 roads (year).....	528,948,716	562,098,962
Railroad construction, miles.....	5,700	4,110
Wheat raised, bushels.....	899,262,000	611,780,000
Corn raised, bushels.....	1,489,970,000	2,060,154,000
Cotton raised, bales.....	8,655,518	8,000,000
Pig iron produced (tons of 2,000 pounds).....	10,307,028	9,273,455
Steel rails, Bessemer (tons of 2,000 pounds).....	2,091,978	1,366,259
Anthracite coal (tons of 2,240 pounds).....	35,555,174	40,448,836
Petroleum (runs) production, barrels.....	29,130,751	34,128,951
Immigration into the United States (year).....	491,026	590,666

The prices of leading staples on or about the 1st of January, 1892, compared with prices at the same date in 1891 and 1890 were as follow:

STAPLES.	1890.	1891.	1892.
Cotton, middling uplands, per pound.....	10½	9½	7½
Standard sheetings, per square yard.....	7½	7½	6½
Wool, Ohio XX, per pound.....	85½ to 84	88 to 84	80 to 81
Iron, American pig No. 1, per ton.....	\$19 50 to \$20 50	\$16 50 to \$17 50	\$16 to \$17
Steel rails at mills, per ton.....	\$35 00	\$25 50	\$30 00
Wheat, No. 2 red winter, per bushel.....	85½	\$1 03½	\$1 04½
Corn, Western mixed No. 2, per bushel.....	39½	50	52½
Pork, mess, per barrel.....	\$10 25	\$11 50 to \$12	\$10 00

The Crops.—The cereal crops of the United States were almost unprecedented as to quantity and generally of excellent quality in 1891. Winter wheat had a good start; it grew rapidly in the spring; it was harvested under fair conditions and promptly marketed. Spring wheat, especially in the Northwest, yielded abundantly, and only in a few sections was it visited by frost, which, however, did little injury. Corn grew rapidly, and it matured under unusually favorable conditions, the weather during the latter part of September and early in October being warm and generally dry. The heavy yield of the crops was not accompanied by low prices. The European demand for wheat was urgent early in the season, owing to the deficiency in the foreign crops and also to the prohibition of the export of rye and wheat from Russia, and good prices were well maintained, stimulating the marketing of winter and spring wheat. A partial corner in old corn in September carried the price to figures which induced farmers to sell all that they could spare, and the old crop was pretty

generally disposed of before the new crop became available. Then there was a fair export movement of it to Europe, where it was used as a substitute for other grains. Producers of cotton were unable in some sections, particularly in the South Atlantic States, to realize the cost of growing. The large crop of 1890 depressed prices, and the necessities of the farmers compelled them to force the crop of 1891 upon the market, and this caused a very serious fall in prices, and late in December middling uplands sold at 7½ cents per pound. Taking prices in New York Jan. 1, if the whole of the crops could have been laid down at that point on that date, the values would have been as in the table at the top of next page.

Manufacturing Industries.—Manufacturing and mercantile interests did not experience the full benefits from the excellent yield of the crops. General trade was dull, goods sold at very low prices, and the whole South, as well as all cotton interests, suffered in the fall from the decline in the staple, and print cloths, early in

ESTIMATES OF CROP VALUES.

PRODUCTS.	CROP OF 1891.			CROP OF 1890.		
	Yield.	Price, Jan. 1, 1891.	Value.	Yield.	Price, Jan. 1, 1891.	Value.
Wheat, bushels.....	611,780,000	\$1 06½	\$653,975,150	399,262,000	\$1 05½	\$422,219,565
Corn, bushels.....	2,060,154,000	32½	1,076,439,465	1,439,970,000	70½	882,887,225
Cotton, bales.....	8,000,000	7½	825,000,000	8,655,518	9 ½	402,806,004
Total values.....			\$2,054,505,615			\$1,707,922,794

December, touched 2½ cents per yard, the lowest price ever known. Later they rallied to 3½, with cotton at 7½ cents per pound. The iron trade began to improve early in the summer. A large number of furnaces went into blast toward the end of the year, and the output was increased by the good demand from railroads and for structural work. Cotton manufacturing statistics for the year ending Aug. 31 showed a consumption of 2,530,916 bales, against 2,349,478 for the previous year. The production of print cloths at Fall River in the calendar year was 9,985,000 pieces, against 9,937,000 in 1890, and the stock at the end of the year was 90,000 pieces, against 588,000 at the end of 1890. The dividends paid by 33 manufacturing companies in Fall River with a capital of \$18,658,000 averaged 4·81 per cent. in 1891, against 7·62 in 1890. The trade in wool and woolen goods was fair, and among the favorable features was the discontinuance of the heavy auction sales of flannels in New York. The stock of foreign and domestic wool on the Boston market at the end of 1891 was 32,942,000 pounds, against 27,798,500 Dec. 31, 1890. Anthracite-coal production was in excess of any previous year, and the total shipped to market was 40,448,336 tons, against 35,855,174 in 1890. Business failures included 25 banks with a capital of \$3,662,000, of which 13 banks in Kansas and Nebraska, having a total capital of \$1,137,000, failed in consequence of short crops in 1890. The number of mercantile failures for the year in the United States was 12,273, with liabilities of \$189,863,638, against 10,907 in 1890, with liabilities of \$189,856,964.

Railroads.—Although the tonnage was small from the cereal crops of the previous year and the iron movement decreased, railroad gross earnings were well maintained during the first half of 1891, the natural expansion of business and increase in cotton freights aiding materially, but the Granger roads showed small profits. With the movement of the wheat crop the situation was completely changed. The grain-car

rying roads were taxed to their utmost capacity in the fall, and late in November and early in December there was a serious blockade at Chicago of east-bound grain-laden cars, and the movement did not become free until the end of the year. Then the tonnage destined for the seaboard from Chicago and Buffalo was unprecedentedly large. The increase in railroad mileage was only moderate. There was a light demand until late in the year for new railroad bonds, and even old-established companies had difficulty in placing additional issues, and consequently new construction was deferred or confined to necessary improvements. The aggressive action of legislatures and railroad commissioners in some of the States in reducing freight rates had the effect of checking railroad building. In Iowa only 28 miles of new rail were laid, and in Texas only 155 miles. The total for the entire country was 4,100 miles, against 5,700 in 1890. Among the consolidations for the year were the Rome, Watertown and Ogdensburg with the New York Central system. The Beech Creek road was absorbed by the New York Central. The Pittsburg and Western passed under the control of the Baltimore and Ohio. The Suburban Rapid Transit system became part of the Manhattan Elevated.

The table below shows gross and net earnings of the principal trunk lines.

The Money Market.—The most important feature in the market for money was the drain of about \$70,000,000 gold by exports to Europe during the first seven months, a little over \$26,000,000 being shipped in May. The loss of this gold was offset to some extent by the issue of Treasury notes against purchases of 4,500,000 ounces per month of silver bullion. Mainly for this reason the rate for money on call was not greatly deranged, and indeed it did not rule above 6 per cent., except early in January during this period. Another reason why the market was not disturbed was that, except for a very brief period, when the Free Silver Coinage bill was under consideration in Congress, there seemed to be no

ROADS.	1885-'86.	1886-'87.	1887-'88.	1888-'89.	1889-'90.	1890-'91.
PENNSYLVANIA:						
Gross earnings.....	\$50,379,077	\$55,671,313	\$58,172,077	\$61,514,445	\$66,202,260	\$67,426,841
Net earnings.....	17,759,452	18,584,728	18,840,925	20,417,610	21,324,706	21,479,396
NEW YORK CENTRAL:						
Gross earnings.....	30,506,861	35,297,055	36,192,920	35,096,236	37,008,403	37,902,114
Net earnings.....	11,895,984	12,918,432	8,372,209	9,422,858	12,516,274	12,581,262
ERIE:						
Gross earnings.....	22,500,046	24,210,358	24,892,819	24,595,278	26,454,834	27,503,688
Net earnings.....	6,111,403	6,819,685	6,829,350	6,749,842	6,948,882	7,250,698
BALTIMORE AND OHIO:						
Gross earnings.....	18,422,498	20,659,036	20,353,492	21,308,002	24,412,096	24,590,395
Net earnings.....	6,386,695	6,538,905	6,152,680	6,492,138	7,443,226	7,452,162

fear that the finances of the country would be affected by a redundancy of silver currency. The drain of gold to Europe and of money to the interior for crop purposes brought about a reduction in the specie holdings of the New York banks from \$90,268,900 at the end of January to \$58,769,000 by the first week in September, but the legal-tender notes were increased from \$26,571,700 on Jan. 3 to \$54,145,800 by Aug. 1. Subsequently the volume of these notes was reduced, by shipments to the interior, to \$29,238,700 by Nov. 7, but at the same time the specie in the banks was increased, through imports from Europe and Treasury disbursements for matured 4½-per-cent. bonds, from \$58,769,000 on Sept. 5 to \$96,392,500 on Dec. 26. The surplus reserve of the New York banks was at the maximum, \$24,089,775, Jan. 24. There was a fall to \$4,319,850 by April 18, a recovery to \$19,710,325 by July 25, and a reduction to the minimum of the year, \$3,102,750, Oct. 3, after which there was a gradual improvement to \$19,480,025 by Dec. 26. Money on call loaned at 9 per cent. early in January, but soon after there was a gradual fall, influenced by the accumulation of funds in the banks, and the rate fell to 1½ per cent. by the close. Time contracts for thirty to ninety days declined from 6 per cent. at the beginning, to 4½ by the end of the month, and commercial paper was 5 to 5½ per cent. for prime indorsed bills receivable. Money was easy early in February, but more active toward the close by reason of a reduction in the bank reserves, and also because of the movement of gold to Europe, which then began; but the rate on call advanced only from 1 to 4 per cent. and thirty to sixty day contracts on time were made at 4 to 4½ per cent. One feature during the month was the suspension of the American Loan and Trust Company, due to a run upon the institution caused by disclosures of bad management; but this had no effect upon the money market. In March the bank reserves were still further reduced by gold exports to Europe, but the supply of bankers' balances was ample for all requirements, and the range for the month was from 1 to 4 per cent. Time loans for thirty to ninety days were made at 4 to 4½ per cent., and short commercial paper sold at 5½. The Washington National Bank suspended during the month, in consequence of imprudent loans made by the president. In April over \$13,000,000 gold was shipped to Europe, and, although the supply of money on call was generally abundant, there were occasions when belated borrowers were required to pay 6 per cent. The lowest for the month was 1½ per cent. Time contracts were freely offered at 4 to 4½ per cent. for thirty to ninety days, and prime short-date commercial paper sold at 5 to 5½ per cent. On the 25th the Treasury Department ordered that further redemptions of 4½-per-cents., under the circular in force since the previous year, should cease. In May loans on call were made at 6 and at 2½ per cent., and although the movement of gold to Europe was large, almost \$26,000,000 being sent forward, the bankers seemed to be well supplied with unused balances, while the foreign houses who were not shipping gold were liberal lenders. There was a good demand for time contracts, which were quoted at 5 to 5½ per cent. for thirty to ninety days, and at 5½ to 6 per cent.

for four to six months, and in some instances lenders stipulated for repayment in gold. In June the range for money on call was 5 to 1 per cent. Short-time loans were offered at 4 to 4½ per cent., but they were difficult to place, and the demand was chiefly for periods from four to six months, but lenders were unwilling to make engagements for these dates. Commercial paper was quiet and the demand was small because of failures of leather houses in Boston and also for the reason that the disclosures regarding the affairs of the Keystone Bank in Philadelphia kept buyers from that city out of the market. Rates for short double-name paper were 5½ to 5½ per cent. The gold shipments fell off to about \$16,000,000 during this month. In July there was a liberal offering of money on call, and those who could not lend on time on satisfactory terms employed their funds from day to day. The range for the month was 4 to 1 per cent. Time contracts were offered at 4 to 4½ per cent. for thirty to ninety days. Commercial paper was in good supply, but the city banks were entirely out of the market as buyers. Early in August money on call loaned at 1½ to 4 per cent., but later the increased business on the Stock Exchange led to a better demand, and rates rose to 6 per cent. The offer of the Secretary of the Treasury to extend the 4½-percents. at 2 per cent. resulted in the presentation of \$22,621,650, leaving nearly \$27,000,000 to be redeemed at maturity on Sept. 2. Time contracts were quoted at 4 per cent. for thirty to ninety days and commercial paper was dull at 5½ to 6 per cent. for short-double names. In September money on call loaned at 25 and at 1½ per cent. The higher rate was due to a flurry which followed the news of the suspension of S. V. White & Co. on the 22d. The lowest rate was recorded early in the month, and the average was not above 4 per cent. until after the 15th, when low bank reserves and a good demand resulting from the activity on the Stock Exchange caused the average to move up to 5½ per cent. Time loans were in a little better demand, and the rate for thirty to ninety days was 4½ to 6 per cent. Commercial paper was slow of sale at 5½ to 6 per cent. for short double names. In October money on call loaned at 6 and at 3 per cent. There was only a light demand for time loans until toward the close, and rates early in the month were 5½ per cent. for thirty to sixty days and 6 per cent. for three to six months; but after the 15th the offerings were more abundant and loans were made at 4 to 4½ per cent. for thirty to sixty days, and 4½ to 5 per cent. for four to six months. Commercial paper was dull and without feature until the 22d, when the city banks came into the market as buyers, and rates at the close were 5 per cent. for short bills receivable. During the early part of November the drain of money to Boston to meet the requirements of banks at that center caused a rise in the rate on call to 15 per cent., but before the middle of the month there was a fall to 3 per cent., and by the close to 2 per cent. Time contracts were 5 per cent. for thirty to sixty days until the call money market grew easier, and then offerings were liberal at 4 to 4½ per cent. for these periods. The disturbance in Boston caused by the failure of the Maverick National Bank kept Eastern buyers out of the market for commercial

paper, and the inquiry from the New York city banks was light until after the 15th, when gradually the demand increased; but the supply of really choice names was small, and only a light business was done. Rates at the end of the month were 5 per cent. for short indorsed bills and $5\frac{1}{2}$ to 6 per cent. for jobbers' paper and single-name notes. On Dec. 4 there was an advance in the call loan rate to 6 per cent., caused by the attempt to assassinate Mr. Russell Sage, but it immediately fell to 3, and money was easy at 2 to 3 per cent. until the 22d, when there was an advance to $4\frac{1}{2}$. Subsequently it declined to 2, and there was a liberal supply at the end of the month. Time contracts were freely offered, and by the close the rate for thirty to sixty days was 3 to 4, while for from three to six months it was 4 to $4\frac{1}{2}$ per cent. There was a good inquiry for commercial paper at $4\frac{1}{2}$ per cent. for short indorsed bills.

The condition of the New York Clearing-House banks, the rates for money, exchange, and silver, and prices for United States bonds on or about Jan. 1, 1892, compared with the preceding two years, are as follow:

ITEMS.	1890.	1891.	1892.
NEW YORK CITY BANKS:			
Loans and discounts.....	\$394,761,800	\$385,678,500	\$438,616,400
Specie.....	75,560,700	78,663,200	95,972,200
Circulation.....	8,731,800	8,599,900	5,587,400
Net deposits.....	398,720,500	386,632,100	466,214,200
Legal tenders.....	26,141,100	26,571,700	37,514,400
Required reserve.....	99,680,125	96,658,025	116,564,550
Reserve held.....	101,701,800	105,234,900	133,786,600
Surplus reserve.....	\$2,021,675	\$3,576,875	\$17,282,050
MONEY, EXCHANGE, SILVER:			
Call loans.....	$4\frac{1}{2}$ to 5	$2\frac{1}{2}$ to 8	■
Prime paper, 60 days.....	$5\frac{1}{2}$ to $6\frac{1}{2}$	7	$4\frac{1}{2}$ to $5\frac{1}{2}$
Silver in London, per ounce.....	$4\frac{1}{2}$ d.	45 d.	$43\frac{1}{2}$ d.
Prime sterling bills, 60 days.....	$\$4$ 80 $\frac{1}{2}$	4 d.	$\$4$ 22 $\frac{1}{2}$
UNITED STATES BONDS:			
Currency 6s, 1898.....	124	118	117 $\frac{1}{2}$
4s coupon, 1891.....	104 $\frac{1}{2}$	108 $\frac{1}{2}$	100 *
4s coupon, 1907.....	126	122 $\frac{1}{2}$	116 $\frac{1}{2}$

* Extended 2 per cents.

The following is the New York Clearing-House statement of totals at the beginning of each quarter of 1891 and at the end of the year:

DATE.	Loans.	Specie.	Circulation.	Deposits.	Legal tenders.
January 3.....	\$385,678,500	\$78,668,200	\$3,599,900	\$386,632,100	\$26,571,700
March 29.....	410,493,200	77,736,600	3,501,100	415,464,600	84,571,600
July 3.....	398,720,500	66,235,400	3,608,200	464,658,900	50,394,400
September 26.....	407,517,100	62,403,100	5,570,300	464,641,500	42,765,400
December 26.....	429,255,400	96,392,500	5,604,700	455,306,300	86,914,100

Foreign Exchange.—The imports of merchandise for the year ending Dec. 31, 1891, were \$4,914,920 above those for 1890, and the exports of domestic and foreign merchandise were \$113,003,734 more. The excess of merchandise exports over imports for the year was \$142,193,636 against \$34,104,822 for 1890. The excess of exports over imports of merchandise, coin, and bullion for 1891 was \$185,316,025, against \$42,051,476 for 1890. Gold exports were \$34,118,202 in excess of the imports in 1891, against \$3,832,984 in 1890.

In January sterling exchange opened at \$4.80 $\frac{1}{2}$ for sixty days and \$4.84 for sight, and, influenced by a demand for investment and also to re-

mit for stocks sold for European account, rates rose to \$4.85 $\frac{1}{2}$ to \$4.86 for long and \$4.88 $\frac{1}{2}$ to \$4.89 for short by the 14th. The advance was stimulated by the fear of currency complications resulting from the threatened enactment of a free silver-coinage bill by Congress, and this induced some drawers to decline to sell bills, in view of the fact that the measure under consideration provided that all certificates issued against coin be made a full legal tender. But this distrustful feeling soon entirely disappeared, and drawers were so liberal with their offerings that rates fell off, and, under the influence of a reduction in the Bank-of-England rate to 3 $\frac{1}{2}$ per cent., on the 21st there was a gradual decline, and the market closed at \$4.85 $\frac{1}{2}$ to \$4.85 $\frac{1}{2}$ for sixty-day and \$4.88 for sight. The tone was generally firm throughout the month of February, the market opening at \$4.85 $\frac{1}{2}$ for long and \$4.88 for short, advancing toward the middle of the month to \$4.86 $\frac{1}{2}$ to \$4.87 for the former and \$4.88 $\frac{1}{2}$ to \$4.89 for the latter, but subsequently it grew easier, and rates at the close were \$4.86 for sixty-day and \$4.88 $\frac{1}{2}$ to \$4.89 for sight. Commercial bills were scarce, and there was a good

demand to remit for stocks sold for European account and also in settlement of mercantile credits, which adjustment had been deferred, because importers needed their money for the payment of duties on goods which were required to be withdrawn from bond on or before Feb. 1. Gold to the amount of \$3,100,000 was shipped to Berlin during the month as an indirect exchange operation. In March sterling opened firm at \$4.86 for sixty-day and \$4.89 for sight. On the 7th gold bars to the amount of \$600,000 were shipped to Berlin. The Treasury Department, under authority of an act passed at the last session of Congress, imposed a charge of 40 cents per \$1,000 on these bars, the intention

being, as far as possible, to check the export of gold. On the 18th an application for \$1,000,000 more gold in bars having been refused by the Treasury Department, the shippers were compelled to take coin in the proportion of four sevenths double eagles, two sevenths eagles, and one seventh half-eagles, and, as this added to the cost of the shipment, exchange advanced to \$4.87 for sixty-day and \$4.89½ for sight. On the 21st there was a further export of \$2,275,000 in gold coin. Exchange fell off on the 26th to \$4.86½ for long and \$4.89 for short, and \$700,000 gold coin was sent to Germany on the 28th, but the proportion was changed to two fifths each of double eagles and eagles and one fifth half-eagles. Exchange was strong early in April at \$4.87 for sixty-day and \$4.89½ for sight, but later, under the influence of dearer discounts in London, the long rate was reduced to \$4.86 and short remained at \$4.89½ until the 27th, when it advanced to \$4.90. Gold coin to the amount of \$13,140,000 was sent to Europe, principally Germany, during the month. Exchange was firm at \$4.86 for sixty-day and \$4.90 for sight early in May. On the 6th the tone became easier, because of a premium of a half penny per ounce paid by the Bank of England in order to attract American gold coin to London, and shippers of the metal were free sellers of sterling, thus causing a reduction in the rates to \$4.85 for long and \$4.89 for short. Subsequently there was a fall in the former to \$4.84½, because of dearer discounts in London. On the 16th the price of gold coin was further advanced by the Bank of England to 76s. 6½d. per ounce, and this caused a fall in sterling to \$4.84 for sixty-day and \$4.88 for sight. Soon after the price of gold was reduced in London to 76s. 6d. per ounce, and on the 25th exchange rose to \$4.84½ for long and \$4.88½ for short, and on the following day to \$4.85 for the former and \$4.89 for the latter, and gold coin to the amount of \$3,000,000 was shipped, making \$26,061,000 for the month. Exchange opened at \$4.85½ for sixty-day and \$4.89½ for sight in June. A reduction in the Bank-of-England rate on the 3d to 4 per cent. caused an advance in long bills to \$4.86, and a reduction in the bank rate on the 17th to 3 per cent. brought about a further rise in sixty-day bills to \$4.87½. During the last days of the month liberal purchases of securities by the arbitrage houses for European account, and a lighter inquiry, made sterling heavy, and it closed at \$4.86½ for long and \$4.88½ for short. Gold to the amount of \$16,200,000 was shipped to London and Paris during the month, but the movement to the first-named center was on special order after the 5th. In July exchange opened at \$4.86 for sixty-day and \$4.88 for sight, and under the influence of easier discounts in London and moderately large offerings of commercial bills it gradually fell to \$4.84½ for sixty-day and \$4.87 to \$4.87½ for sight. Gold to the amount of \$6,500,000 was shipped to Europe during the month, all of it on special order, and principally to the Bank of France, that institution contracting with a banker in New York to supply the metal, and entering into stipulations that when it should be required later in the season no premium would be demanded. In August exchange opened at \$4.84½ to \$4.85 for long and \$4.87 to \$4.87½ for short, and, influenced by offerings of com-

mercial bills and of drafts against stocks bought for European account, there was a gradual fall to \$4.83 for sixty-day and \$4.85½ for sight. The outward movement of gold had then ceased, and at the close of the month it was announced that \$750,000 of the metal had been shipped from the Continent for New York. In September exchange opened at \$4.83 to \$4.83½ for sixty-day and \$4.85 to \$4.85½ for sight, and under the influence of liberal offerings of arbitrage and commercial bills there was a fall to \$4.81 for long and \$4.84 for short by the close; but the tone then was firmer by reason of a demand to remit for stocks sold for European account. The imports of gold during the month were \$6,856,000. In October exchange opened at \$4.80 to \$4.81 for long and \$4.84 for short, but owing to a demand to remit for stocks sold for European account, and also because of a scarcity of commercial bills, there was an advance to \$4.81½ for sixty-day and \$4.85 for sight by the middle of the month. The tone was easier thereafter to the close, especially for short, lower discounts in London increasing the demand for long bills. The rates at the end of the month were \$4.81 to \$4.81½ for sixty-day and \$4.84½ for sight. The arrivals of gold from Europe during October were \$19,112,000. A better supply of commercial bills, chiefly drawn against cotton, caused the market to fall off to \$4.80½ for long and \$4.84 for short soon after the opening of November, and it was also effected by dearer money on the Stock Exchange, but during the second week a scarcity of grain bills, owing to shipments being delayed by the absence of vessels, tended to make the market firmer at \$4.81 to \$4.81½ for sixty-day and \$4.84½ for sight. Then came a rise by the 18th to \$4.82 for long and \$4.85 for short, and the tone was firm thereafter to the close, arbitrage as well as commercial bills being scarce. The arrivals of gold during the month were \$3,557,000. In December the market opened at \$4.82 for long and \$4.85 for short, but a light supply of commercial bills and, later, a good inquiry to remit for interest and in settlement of mercantile credits caused a gradual advance by the 15th to \$4.83 for sixty-day and \$4.86 for short. When the demand was satisfied, rates fell off to \$4.82 for long and \$4.84½ for short. The market closed at \$4.82½ to \$4.83 for sixty-day and \$4.85 to \$4.85½ for sight. Gold arrivals from Europe amounted to \$2,774,000.

The Stock Market.—The highest prices for leading stocks during the year were recorded in August and December, and the lowest from May to July. The market opened strong in January, and for the first ten days the tendency was upward, with the Grangers and Delaware, Lackawanna and Western leading. Louisville and Nashville was favorably influenced by the declaration of a cash dividend of 2½ per cent.; the Villards improved on news of the resumption of business by Decker, Howell & Co., who suspended in Nov., 1890, and the Gould specialties and all Western properties were freely bought on reports that the managers of these roads were entirely in accord as to the plan for new regulations for the Western Traffic Association. The tone of the market was strong until the 14th. A leading feature on the 12th was a rapid

rise in Sugar Trust on news that the receiver had been discharged, the trust organized into the American Sugar Refiners' Company under the laws of New Jersey, and that a dividend of 5 per cent. had been declared. The suspension of a bear trader and the closing out, for his account, of a large line of stocks made the market very active and higher until after the middle of the month, when there was free selling of the Gould specialties and the Grangers, followed by a dull and heavy movement. One feature was a sharp fall in New England on the disclosure of the fact that the advance in the stock had been assisted by a forged statement purporting to be signed by certain officials of the New York, New Haven and Hartford, in which they were declared to be in favor of the consolidation of the two companies. Chicago Gas was unfavorably influenced by the announcement that the dividend would be passed. Toward the close of the month there was an irregular recovery in the leaders due to rebuying to cover short contracts, and the majority of the stocks showed a very decided advance at the close of January compared with the opening. The sudden death of Secretary Windom on the 29th caused a sharp fall in silver in London and in silver-bullion certificates in our market, but there was an immediate recovery. In February the market opened strong with Delaware, Lackawanna and Western, Lake Shore, Manhattan Elevated, Pacific Mail, Manitoba and the Villards leading. Then followed a rise in New York, Susquehanna and Western on a report, subsequently denied, that there was a contest for control of the road between the Delaware and Hudson and the Delaware, Lackawanna and Western. Toward the middle of the month the market was unfavorably influenced by the withdrawal of \$1,000,000 gold for shipment to Berlin, and later the Grangers were freely sold on the announcement of a reduction of the dividend on Chicago, Burlington and Quincy, and the whole market was more or less affected by the suspension of the American Loan and Trust Company, and also by the withdrawal of \$600,000 more gold for shipment to Berlin. Toward the end of the month there was an irregular recovery, but in the last few days the Grangers were unfavorably affected by an attack upon Chicago, Burlington and Quincy, and the tone of the market was heavy at the close. Early in March Pacific Mail rose on news of the passage of the Postal Subsidy bill and the Northern Pacifics were favorably influenced by a decision of the United States Supreme Court in a land-grant case against the Manitoba, by which the claim of the first-named company to a large tract of land on the line of the road was sustained. Chicago, Burlington and Quincy was weak by reason of liberal selling, and the decline in this property more or less affected the other Grangers. On the 6th the news of a panic at Buenos Ayres was made the pretext for raiding the market, but there was a speedy recovery. The decision of the Interstate Commerce Commission in the matter of Coxe Bros. against the Lehigh Valley had a temporarily disturbing effect upon the coal shares. After the middle of the month Rome, Watertown and Ogdensburg rose on news of the absorption of the road by the New York Central, and later New York, Ontario and

Western advanced, in the expectation that this line would also be wanted by the Central. The financial troubles in Philadelphia, resulting from the failure of the Keystone National Bank, had a partially disturbing effect, but in the third week of the month there was a recovery, and the market continued generally strong to the close, and it was only slightly affected by the recall of Baron Fava, the Italian minister at Washington. One feature in the last days of the month was an improvement in the Grangers, caused by the defeat of the Nebraska Freight-rate bill and the adjournment *sine die* of the Legislature of that State. Early in April there was a sharp advance in Sugar Refiners' on a report that an agreement had been made with the Philadelphia refinery to regulate the price of sugar; a fall in the Northern Pacifics, due to selling for German account, followed by a recovery on the removal of the pressure; a decline in the Grangers and in other Western stocks, because of the failure to get a quorum at Chicago of the Advisory Board of the Western Traffic Association, but later there was a reaction, on the statement that the meeting would be held in New York. The Vanderbilts, and particularly Lake Shore, were strong. The movement of gold to Europe had some influence toward the middle of the month, but it appeared to be in great measure counteracted by the expectation that the bank reserves would ere long be augmented by the return of currency from the interior, and that after a while the gold would come back from Europe to pay for cotton and grain, the indications then being that there was an important deficiency in European crops of breadstuffs. The market was generally strong to the close of the month, and it was not disturbed by the discovery on the 27th that the late President of the Ninth National Bank was a defaulter, because assurances were given that the capital of the bank remained unimpaired. The course of the market was downward in May. The Advisory Board of the Western Traffic Association held a meeting in this city early in the month and the most important action taken was the dismissal, with the concurrence of Mr. Jay Gould, of the traffic manager of the Missouri Pacific for violation of the rules of the Association, thus indicating that Mr. Gould was co-operating in the efforts to maintain rates. The continued exports of gold to Europe had a depressing effect at intervals, the bears raiding the market on news of the withdrawals of the metal for shipment. About the middle of the month the flurry at Paris due to the financial and political crisis at Lisbon was reflected in the New York market, and there was a vigorous assault by the bears; but when the trouble in Paris ended, our market reacted. It was irregular and lower for the remainder of the month, influenced in great part by the large exports of gold and a renewal of bear attacks. Early in June Louisville and Nashville was unfavorably affected by news of the contemplated issue of \$7,000,000 new stock, the company being unable to sell its unified 4-per-cent. bonds. Rock Island was broken down on the announcement of the reduction of the quarterly dividend to $\frac{1}{2}$ of 1 per cent. Subsequently there was a recovery in the market under the lead of Atchison, Topeka and Santa Fé, this being affected

by a favorable decision in the suit brought by St. Louis and San Francisco first preferred stockholders. Chicago Gas advanced on news of a settlement of the differences between the company and the city of Chicago, and later the Grangers improved on favorable reports of the condition of the grain crops and confirmation of the statement of a large deficiency in the European crops. One feature after the middle of the month was an advance in silver-bullion certificates, caused by heavy purchases by the director of the mint at prices above the parity of the London quotation. Large withdrawals of gold for export to Europe had more or less of a disturbing effect upon the stock market for the remainder of the month, although the crop news continued good and the harvesting of winter wheat, then in progress, showed excellent results. The course of prices was generally downward in July. An injunction to restrain the payment of the dividend on Sugar Refiners' had a temporarily disturbing effect upon that stock. A report, which was not confirmed, that the Chicago, Burlington and Quincy would issue more bonds caused a fall in that stock. One feature was a rise in Edison Electric shares on the announcement of the decision of the United States Circuit Court in the Edison lamp case sustaining the patent. On the 18th the news of the failure of the English Bank of the Rio Plate had an unsettling influence in London, which was reflected here, and the movement was irregularly downward for the remainder of the month, with the Gould specialties, the Grangers, Louisville and Nashville, and Atchison, Topeka and Santa Fé about the weakest, and the market was more or less influenced by rumors affecting the standing of prominent financial houses in this city. Early in August the reports of a large deficiency in all the European grain crops were fully confirmed, and the Russian Government issued an order prohibiting the export of rye. The weather here was very favorable for the crops, harvesting of spring wheat was making rapid progress, and the conditions were good for corn. This excellent crop situation stimulated buying of American securities in London, and the denial of the disquieting rumors current at the close of July caused our market to open very strong in August. Soon after there was free selling of Union Pacific, due to reports, subsequently confirmed, that the floating debt had become embarrassing by reason of an inability longer to borrow on time, and the decline in this specialty had an unfavorable influence upon the whole market; but the announcement that a syndicate would be formed to carry over this debt later brought about a recovery, under the effect of which the whole list advanced. In the third week of the month there was a wild speculation in grain at all the distributing centers, which checked export buying and caused a rise in exchange and a fall in stocks; but in the fourth week repurchases to cover short contracts and a demand for stocks for European account carried prices steadily upward, and the market was active and higher for the remainder of the month. In September the speculation was active and the tone generally strong, influenced by European purchases through the arbitrage houses, by a return flow of gold from Europe, and by the very favorable

crop reports and increased railroad earnings. Early in the month Union Pacific was freely bought by the arbitrage houses and by the local traders on a report that the Vanderbilts were seeking control. But on the positive denial of this rumor Europeans freely sold it, and this was followed by a sharp decline on news that a loan by an impatient lender had been called and that the company was embarrassed for funds with which to meet this and other demands. This led to renewed efforts on the part of the managers to secure the assent of creditors to the plan for extending the floating debt, but these efforts were not immediately successful, and Union Pacific was more or less of a disturbing factor until after the middle of the month. On the news of gold shipments hither from the Continent during the first week in the month the Vanderbilts took the lead and the Grangers closely followed, stimulating a covering of short contracts in nearly all the active stocks except the Gould specialties and Richmond Terminal, the latter being affected by reports that the floating debt of this company had become embarrassing. After the middle of the month the market was very active and strong, with good buying of Atchison, Topeka and Santa Fé and the Grangers as the feature, and, although the Rock Island directors declared only $\frac{1}{4}$ of 1 per cent. dividend for the current quarter, the stock promptly recovered, and even the Gould properties participated in the upward movement. The suspension of S. V. White & Co. checked the rising tendency on the 22d, but the market was recovering on the news that this firm had little or no interest in stocks, when the failure of the Missouri Pacific directors to declare the usual quarterly dividend gave color to reports that it would be passed. A few days later these reports were confirmed, and this news encouraged a bearish demonstration upon the whole list, which was followed by a reaction led by the Vanderbilts. Then came an attack upon Union Pacific on a report that the syndicate would abandon efforts to extend the floating debt, and Missouri Pacific was broken down on the publication of the statement showing that unearned dividends had been paid for some time. Rock Island was subsequently raided, causing an important decline in the Grangers, and the market was more or less unsettled by bear attacks, accompanied by disquieting reports of the condition of Mr. Jay Gould's health, for the remainder of the month. The tone was feverish at the opening of October, with the Gould stocks and the Grangers weakest; but there was a sharp rally soon after, followed by an irregular movement, during which the bears sought to cover their short contracts, and gradually the market grew firmer under the influence of estimates of the cereal crops, based upon the reports of the Department of Agriculture, showing an unprecedented yield of all grains and more especially of corn, which had rapidly matured during the warm weather which prevailed in the latter part of September. In the last week of the month pressure by the bears, accompanied by disquieting reports from Boston, caused by the suicide of Mr. Irving A. Evans, of that city, made the market irregular and lower for the remainder of the month, although during the last few days there were occasional re-

actions, due to further imports of gold from Europe and a report that Russia would soon prohibit the shipments of all grain, which stimulated a rise in all Western stocks. One feature was a fall in the coal shares on news that an output of 4,000,000 tons of anthracite had been agreed upon for November, and another feature was a drop in Sugar Refiners', caused by a reduction in the price of sugar by the Philadelphia refinery. The market opened unsettled and lower in November, in consequence of news of the suspension of the Maverick National Bank of Boston. This institution had a large collection business all over the country, and its failure temporarily tied up considerable amounts of money. The other Boston banks drew upon their balances in this city, and this compelled a calling in of loans by institutions here, under the effect of which money grew active. There was free selling of Chicago, Burlington and Quincy, Union Pacific, New England, and Atchison, Topeka and Santa Fé by Boston houses, and the tendency of the market was irregularly downward for the first ten days. Then there was a recovery, stimulated by large purchases of stocks by the arbitrage houses for European account, and the market was active and generally higher for the remainder of the month. The coal shares were unfavorably affected during the second week by free selling of Delaware and Hudson, accompanied by rumors that a large holder of the stock was disposing of his property. This was denied, and then came a rumor that there was likely to be a dispute over the allotment of coal for next year. This was believed to be set at rest in the last week of the month by the harmonious action of the coal sale's agents in fixing the output for December at 3,250,000 tons, thus restricting production and indicating that the policy in force would be continued. The market was at intervals affected by reports of an unsettled condition of financial affairs on the Continent of Europe, but these subsequently proved to be exaggerations. On the 27th the failure of Field, Lindley, Weichers & Co. made the market irregular, but there was a partial recovery, although the feeling at the close of the month was not very confident because of the discovery that securities pledged with this firm by the Union Pacific for a large loan had been rehypothecated. Early in December the market was more or less influenced by efforts by the governors of the Stock Exchange to trace these rehypothecated securities. The attempt to assassinate Mr. Russell Sage on the 4th temporarily unsettled the market. Toward the end of the first week a buoyant tone for American securities in London encouraged buying here, and the favorites were the Vanderbilts, which were directly affected by the expectation that extra dividends would be declared. The tendency was generally upward for the remainder of the month, nearly all the active stocks participating, and the Vanderbilts rising sharply on the announcement of increased dividends for Lake Shore, Michigan Central, and Canada Southern. The market closed strong, and some of the leading properties sold at the best figures of the year. Total sales of stocks at the New York Stock Exchange for the year 1891 were 69,031,689 shares against 71,282,885 in 1890 and 72,014,600 in 1889.

The following table shows prices of leading stocks at the beginning of the years 1890, 1891, and 1892:

STOCKS.	1890.	1891.	1892.
New York Central.....	100½	101½	116½
Erie.....	26	19½	34½
Lake Shore.....	104½	106½	123½
Michigan Central.....	94½	91	106
Rock Island.....	9½	7½	89½
Northwest, common.....	111½	104½	116½
St. Paul, common.....	66½	61	85½
Dela., Lackawanna and Western.....	126	181½	139
Central New Jersey.....	125	106½	113

The following shows the highest prices of a few of the speculative stocks in 1890 and the highest and lowest in 1891:

STOCKS.	1890.	1891.	
	Highest.	Highest.	Lowest.
Atchison, Topeka and Santa Fé..	50½	47½	24½
Canada Southern.....	61½	64½	47½
Central New Jersey.....	12½	122½	106½
Central Pacific.....	8½	85	29
Chicago Gas.....	65	71½	54
Chicago, Burlington and Quincy.....	111½	110	77½
Delaware and Hudson.....	175	141½	118½
Dela., Lackawanna and Western.....	14½	147½	130
Erie.....	29½	34	17½
Illinois Central.....	120	108½	90
Lake Shore.....	114½	127	107½
Louisville and Nashville.....	92½	8½	67½
Michigan Central.....	104½	108½	87½
Missouri Pacific.....	72½	77½	54½
New York Central.....	111	114½	9½
New York and New England.....	52½	43	31
Northwestern.....	117	118½	102½
Northern Pacific.....	31½	31	21½
Northern Pacific, preferred.....	86	78½	59½
Pacific Mail.....	4½	41½	31½
Pullman.....	22½	186½	172
Reading.....	4½	40½	27½
Richmond Terminal.....	2½	14	8½
Rock Island.....	98½	91½	68½
St. Paul.....	70½	82½	54½
Union Pacific.....	68½	52½	52½
Western Union.....	87	88½	76

FINE ARTS IN 1891. Under this title are treated the principal art events of the past year, ending with December, 1890, including especially the great exhibitions in Europe and the United States, sales and acquisitions of works of art, and erection of public statues and monuments.

Paris Salon.—The exhibition of the Société des Artistes Français, in the Palais de l'Industrie (May 1 to June 30), comprised 3,660 numbers, classified as follow: Paintings, 1,793; cartoons, water colors, pastels, miniatures, enamels, porcelain pictures, etc., 486; sculptures, 740; engraving on medals and precious stones, 54; architecture, 211; engraving and lithography, 436. The receipts were 315,000 francs.

Section of painting: No medal of honor awarded. First-class medal, none awarded. Second-class medals: Paul Jean Gervais ("Les Saintes-Maries"), Alexis Axilette ("L'Été"), Marius Roy ("Le Réveil: Lendemain de Solferino"), Claude Bourgonnier ("La Tentation"), Chevallier Taylor ("La Dernière Communion"), Jean Baptiste Duffaud ("La Mort d'Ourrias"), Émile Isenbart ("Le Matin au Bord du Doubs"), Charles Lucien Léandre ("Les Long Jours"), François Thevenot ("X..."). Fernand Just Quignon ("Les Régains"), Ernest Baillet ("La Berge, à Portejoie"). Third-class medals: James Guthrie, Louis de Schryver, Otto Fridreich, José Salgado,

Henry Bisbing, Henri Eugène le Sidauer, Vincent Chevilliard, Louis Paul Dessar, Maurice Henri Orange, Émile Noirot, Albert Rigolot, Léopold François Kowalsky, Charles Henri Franzini d'Issoncourt, Édouard Louis Bisson, Louis Grier, Georges Antonio Lopsigich, Henri Royer, Armand Guery, Pierre Ballut, Frank Brangwyn, Basile Lemeunier, Pierre Bellet, Gaston Mélingue, Lucien Berthault, Guillaume Romain Fouace, Louis Chalon, Edmond Borchard, Harry Van der Weyden, Anshelm Léonard Schultzberg, André Antoine Crochepierre, Étienne Csok, Jacqueson de la Chevreuse, Tancrède Bastet, Mlle. Caroline Bailly (miniature).

Section of sculpture: Medal of honor awarded to Alfred Boucher for his marble statue "À la Terre." First-class medals: Antoine Gardet (deceased), for his marble group "Sommeil de l'Enfant Jésus," and Édouard Pepin, for his allegorical group in plaster entitled "Le Jong." Second-class medals: Stanislas Lami, marble statue "Première Faute"; Jean Ernest Boutellier, plaster group "Nympe Victorieuse"; Frederick MacMonnies, plaster statue "Nathan Hale"; André d'Houdain, marble statue "Faun" and plaster group "Repos de Diane"; Benoît Lucien Hercule, bronze statue "Turenne Enfant" and plaster statue "Naïade"; Edgard Henri Boutry, bas-relief "L'Amour et la Folie" and plaster statue "Chasseur"; Mlle. Renée Marcelle Lancelot, bas-relief "La Famille"; Félix Émile Gaulard, "L'Idéal." Third-class medals: Augustin Peene, Alexandre Anglade, Corneille Henri Theunissen, Léon Joseph Chavalliaud, Léon Julien Deschamps, Léon Grandin, Roger Bloche, René Rozet, Paul Aubert, Carlos Lagarrigue, Constant Demetrius Pauchard (engraving on precious stones).

Section of engraving: No medal of honor awarded, First-class medals—Etchings: Adolphe Alphonse Gery-Bichard (engravings for national edition of works of Victor Hugo), Émile Armand Mathey-Doret ("Rubens peint par lui-même"); Burin: Alfred Joseph Annedouche ("Vierge," after Bouguereau). Second-class medals—Burin: Jules Massard; Wood: Mme. Marguerite Jacob Bazin; Lithography: Ernest Guillon. Third-class medals—Etching: Alexandre Gravier, Charles André Coppier, Victor Louis Focillon; Wood: Pierre Gusman, Henri Dochy; Lithography: Jean Joseph Pelissier, Alphonse Audebert.

Section of architecture: No medal of honor. First-class medals: Pierre André, Raymond Barbaud. Second-class medals: Charles Nicolas Normand, Maurice Yvon, Antonin Durand, Victor Dutocq, Saint-Anne Auguste Lauzier. Third-class medals: Georges Chedanne, Marie Marcel Rouillard, Marius Paulme, Paul Dusart, Ernest Victor Charpentier-Bosio.

The picture that attracted most attention at the Salon this year was "La Mort de Babylone" of Georges Rochegrosse, an immense canvas representing the final episode in Belshazzar's feast. In a vast hall, fantastically decorated in the Chaldeo-Assyrian style, men and women, some nude, some half-clad, lie, stupefied by excess, amid the remains of a feast, lighted by the still burning torches. At the left, high up on a platform with many steps, stands the king, looking aghast at the sight before him, for in the

background, through an immense open arch, streams the morning light, and with it the mail-clad Persians who are to destroy him and his city. Though strongly painted, the work is somewhat theatrical in treatment, and wanting in unity. The eye is rather attracted by the nude women lying in the foreground, amid glittering stuffs and flowers, than by the composition as a whole. The work is said to have occupied the artist three years.

J. P. Laurens's "La Voûte d'Acier" is another immense canvas ordered for the Hôtel de Ville. It represents the arrival of Louis XVI at the Hôtel de Ville, July 17, 1789. The king, who has just left his coach, is received at the foot of the steps by Bailly, who offers him a tricolored cockade, and by Lafayette. The sheriffs, ranged on the stairs, form with their swords the "vault of steel," under which the king is to pass. In the background is seen the crowd kept back by the National Guard.

Paul Jean Gervais has illustrated on a large canvas a Christian legend, "Les Saintes-Maries," who, sent adrift in a disabled vessel, are miraculously stranded on the shores of the Provencal marshes. Three female figures, in modest nudity, are in a wreck in the reeds—one standing in the prow, another kneeling, a third stepping upon the flat shore. A brilliant sky with the rising sun gives a warm glow to the figures, which are chastely modeled.

Ulpiano Checa, whose "Chariot Race" was so popular last year, contributed another picture full of life and energy, entitled "Les Huns—Attila." A horde of savage warriors, led by their chief, are riding furiously along a dusty road, with a range of purple mountains in the background.

Louis Chalon's "Mort de Sardanapale" is nearly as large as Rochegrosse's immense canvas, but the subject is not treated with equal ability. Sardanapalus, seated on a golden throne on the summit of a pile of all his riches, including his women clothed in splendid garments and hung with jewels, calmly awaits his fate, while eunuchs below apply torches to the pyre.

Léon Bonnat's "La Jeunesse de Samson" shows a nude youthful athlete struggling at the mouth of a cavern with a lion, whose jaws he is endeavoring to pull asunder.

Jules Breton's "Le Pardon de Kergoat" is an interesting picture of a procession of young girls and women, headed by old Brittany peasants, with flowing locks, bearing tapers, going toward a church half hidden in trees. In the foreground are mendicants kneeling. "L'Été," another contribution, represents a peasant woman with bare arms seated on the grass at the edge of a cornfield.

Bouguereau's "Premiers Bijoux" depicts a peasant youth offering a maiden ripe cherries, out of which she makes ear-rings.

Gérôme's "Lion aux Agnets" is a lion in the desert on the watch for prey, upon which he is about to spring.

Henner contributed a "Piété" and a "Pleureuse" in his usual style and strongly reminiscent of earlier works—his "Dead Christ" and "Magdalen."

Noteworthy among the sculptures was the late Henri Chapu's final exhibit, "Mme. la

Princesse de Galles," a marble statue representing the princess, in full dress, seated in a chair, with one hand resting on the arm. Alexandre Falguière's marble statue "Diane," an elegant work, and Bartholdi's "L'Alsace et la Lorraine se réfugiant au pied de l'autel de la Patrie," a marble group destined for the Gambetta monument at Ville d'Avray, attracted much attention. Bartholdi's two figures, which personify Grief and Hope, are beautiful designs.

Paris: Société Nationale.—The new Société Nationale des Beaux-Arts, founded in 1890, under the presidency of Meissonier (died Jan. 31, 1891), held its second annual exhibition in the Pavillon des Beaux-Arts, in the Champ de Mars (May 15 to June 30). President, Puvis de Chavannes; Vice-Presidents, Carolus-Duran, Dalou, and Bracquemond. The society consists of 125 societies and 71 associates. There are also 21 honorary members. No medals nor rewards were given. The exhibition comprised 1,441 numbers, classified as follow: Paintings, 951; designs, water colors, miniatures, etc., 318; sculptures, 102; engravings, 70. There were besides 88 objects classified separately as *objets d'art*. The receipts of the exhibition were 212,740 francs, an excess of 40,295 francs over the receipts of last year.

Puvis de Chavannes exhibited three decorative works: "L'Été," intended for the Hotel de Ville, and "La Poterie" and "La Céramique," panels for the staircase of the Musée Céramique, Rouen. "L'Été" is an immense composition, showing a blue river winding through a plain stretching to hills in the distance. In the foreground a woman is bathing with her child; other bathers are stretched on the grass. A fisherman, too, is throwing his line, and a peasant conducts a cart of hay dragged by oxen. The landscape has wonderful depth, and the figure groups are full of life.

Henry Gervex exhibited also a panel, entitled "La Musique," intended for one of the spaces in the ceiling of the Galerie des Fêtes in the Hotel de Ville. The lower part of the picture shows a corner of the stage at the opera, with a stage box and a few stalls seen from behind. On the stage Ophelia, on her knees, is singing. Above, among clouds and cupids, a courtier and marquise of Louis XV are playing, the one on a flute, the other on a violoncello, while a genius with a crown floats above their heads. At the top are nude muses on clouds.

Carolus-Duran exhibited nine portraits and a nude entitled "Danaë," a figure stretched upon a black mantle and with crimson draperies for background. Among the portraits, one of Gounod is remarkable.

"La Madeleine chez le Pharisien," by Jean Béraud, attracted much attention for its eccentricity. In a modern Parisian room, grouped around a table spread with the remains of a feast, are a dozen or more notabilities in fashionable morning costume. Beside the table sits Jesus in flowing robes, and at his feet, extended on the floor, is a *demoiselle* in ball costume. Aside from its incongruity, the picture is a strong and excellent piece of work.

Albert Edelfelt, the Finland artist, contributed a picture conceived in a similar spirit, entitled "Marie-Madeleine (Légende Finlandaise)." In a

bright northern landscape, the Christ, in a flowing white robe and sandals, advances along a road bordering a lake. A homely, coarsely clad, Finnish woman throws herself on her knees before him.

Still another in the same realistic manner is Christian Skredvigg's "Le Fils de l'Homme," which represents Christ as a Socialist workman, surrounded by a crowd, who bring sick people to him. Some women are spreading their garments for him to walk upon, and a doctor and others behind stand for Pharisees.

Whistler sent a portrait and a marine piece, and John S. Sargent a portrait. Mr. Whistler's famous "Portrait of My Mother" has been purchased by the Government for the Luxembourg Gallery.

Paris: Miscellaneous.—The Académie des Beaux-Arts has elected as a member in the section of painting Jean Paul Laurens, to take the place of Meissonier, deceased. The number of votes cast was 35, of which Laurens received 18, Jules Lefebvre 16, and Édouard Detaille, 1. Antonin Mercié has been chosen in the section of sculpture by 30 out of 34 votes, to fill the place of Henri Chapu, deceased. The Academy also elected as foreign corresponding members: Section of painting, Francisco Pradilla, of Madrid; section of sculpture, M. Salmon, of Geneva.

The collection of the late banker Charles Noël, sold in February, realized the sum of 334,335 francs. Among the best prices obtained were: Théodore Rousseau, "La Mare—Fontainebleau," 82,100 francs; Corot, "Étang de Ville d'Avray," 39,900; Ziem, "Le Bosphore," 15,600; Troyon, "La Forêt," 11,200; Constable, "Le Débarquement," 15,600; Delacroix, "Christ sur la Croix," 18,850; Jules Dupré, "La Rivière," 13,600; Henner, "La Madeleine," 16,500.

The sale of the studio effects of the late Charles Chaplin, in April, produced 166,455 francs. Among the best prices obtained were: "Dans les Rêves" (Salon, 1887), 25,000 francs; "Age d'Or" (Salon, 1890), 16,500; "Les Lilas," 15,000; "Les Roses," 15,000; "Offrande à Vénus," 15,000.

The sale of the studio effects of Emile van Marcke, in May, produced in the aggregate 881,090 francs. The best prices were: "Vache Brune et Blanche," 31,000; "Vache Suisse," 30,500; "Vache Blanche Paissant," 25,000; "Vache Blanche Merchant," 25,000; "Trois Vaches s'Abreuvant," 20,000.

The sale of the Arosa collection produced 135,700 francs. Among the highest prices were: Delacroix, "Lion dévorant un Chamois," 16,100; Corot, "La Pêche à l'Épervier," 18,900; Daubigny, "Gardeuse de Vaches," 12,510.

The sale of the collection of the late Jules Rœderer, former President of the Tribunal of Commerce at Havre, in June, produced 1,021,520 francs. Among the best prices obtained for oil paintings were: Corot, "Cavalier," 32,000; "Le Passeur," 45,000; "Souvenir d'Italie," 29,200; "Le Sentier," 11,000. Daubigny, "La Sanlaie," 44,000; "Portijoie," 54,000; "Le Mare au Clair," 47,000. Delacroix, "Le Denier de Saint-Pierre," 21,100; Fromentin, "Les Prisonniers," 12,000; "Campement Arabe," 15,100. Théodore Rousseau, "La Mare au Chêne," 90,000; "La Passerelle," 72,000. Troyon, "Pâturage en Norman-

die," 67,000; "L'Abreuvoir," 46,500; "Le Retour à la Ferme," 55,000; "La Mare aux Canards," 81,000; *Étude de Moutons*, 16,200. Pastels and designs: J. F. Millet, "L'Angelus," 100,000; "L'Enfant Malade," 25,100; "Balayeuse," 27,100; "Jeune Bergère," 21,000; "L'Abreuvoir," 17,500; "Le Sentier," 10,200.

The collection of pictures of Georges d'ÿ, in June, brought in the aggregate 365,315 francs. Best prices: Alphonse de Neuville, "Attaque d'une Maison Crénélée" (Salon, 1875), 115,000. *Détaille*, "Bonaparte en Égypte," 50,000 (Dreyfus sale, 32,000). Van Dyke, "Portrait du Comte d'Aligre," 69,000. Delacroix, "Les Natchez," 15,600. Isabey, "Massacre dans une Église," 35,000; "L'Orgie," 12,000.

A monument to Gambetta, by Bartholdi, was unveiled, Nov. 8, at Ville d'Avray. A pedestal, on a handsome sub-base, supports a bronze statue of Gambetta; in its front is a group of two female figures, by Bartholdi, representing Alsace and Lorraine. On the face of the pedestal are the words: "À Léon Gambetta, les Alsaciens-Lorrains."

A statue of La Fontaine, by Dumilâtre, has been placed at the angle of the Avenues Ingres and Ranelagh.

A replica of Barrias's statue of Bernard Palissy, in the square Saint-Germain-des-Près, Paris, was inaugurated, July 5, at Villeneuve-sur-Loir.

A statue of Jean Houdon, by Tony Noël, was unveiled, June 28, at Versailles.

London: Royal Academy.—The Academy now consists of 41 academicians, including Thomas Brock, Andrew C. Gow, and Frank Dicksee (promoted from associates in January), and 29 associates, including David Murray (elected at the same time). There are also 3 honorary members, 4 honorary retired academicians, 4 honorary foreign academicians, and 3 honorary retired associates. Frank Dicksee was elected an academician in succession to Edwin Long, deceased.

The twenty-second winter exhibition of works by the old masters represented the English, Dutch, Flemish, Italian, and Spanish schools. A special feature was a collection of water-color drawings illustrative of the progress of the art in England. The English school was represented by Gainsborough, Reynolds, Romney, Hogarth, Turner, Eddy, and Hoppner; the Dutch, by Vermeer, Van Goyen, Teniers, Ruysdael, Hobbema, Cuyt, Jan Van der Heyde, Adrian Van de Velde, William Van de Velde, Metsu, and Hals. De Hooghe's "Cardplayers," Terborch's "The Letter," and Teniers's "Village Festival" were sent from Buckingham Palace.

The one hundred and twenty-third annual exhibition of the Royal Academy contained 2,102 numbers, including oil and water colors, pastels, black and whites, and sculptures, classified as follow: Oil paintings, 1,162; water colors and miniatures, 393; etchings, drawings, and engravings, 171; architectural drawings, 213; sculpture, 163.

Sir Frederick Leighton contributed three paintings and a statue. "His Perseus and Andromeda," an upright canvas, represents Andromeda, chained to an isolated rock, rising from deep blue water, with gray headlands behind. She is stooping forward in terror at the dragon,

which has alighted on the summit of the rock so close as to overshadow her with its wings. High above, in the blue atmosphere, is Perseus mounted on Pegasus. He has already shot one arrow, which has transfixed the monster and forced it to turn from its prey, and is preparing to shoot another while it belches flame and smoke at him. "The Return of Persephone," also upright, depicts Ceres meeting her daughter at the entrance of Hades, whence she has come in charge of Hermes on her annual visit to the upper world. Ceres is in amber robes, Persephone in white tinged with rose, and Hermes in deep blue. Sir Frederick treats the subject as allegorical of the return of spring, and has set Ceres in a sunny Sicilian atmosphere in strong contrast with the dusk of Hades. This picture has been presented by Sir J. Kitson to the Leeds Gallery.

Luke Fildes's "The Doctor" was perhaps the most popular picture of the year. It represents a cottage interior, lighted by a lamp, with the doctor seated watching, with grave face, a child sick unto death, lying upon pillows on two chairs. The light of the lamp mingles with the wan blueness of dawn, which, coming in at a window behind, reveals the mother seated near the wall with her head bowed and her husband standing beside her with one hand resting upon her shoulder. This picture, one of the strongest and best of the exhibition, has been bought by Henry Tate for the new British National Gallery.

Sir John Millais sent two Scotch landscapes, both views near Birnam, one entitled "Lingering Autumn," the other "Glen Birnam." His "Dorothy" is a full-length portrait of a daughter of Mr. Henry Lawson, of the "Daily Telegraph." Of several portraits, that of Mrs. Joseph Chamberlain, seated at afternoon tea, with a cup and saucer in her lap, attracted most attention, as well for its graceful pose as for its excellent color.

Alma-Tadema's "An Earthly Paradise" represents a naked little girl, lying on a couch among her cast-off garments, and putting up her hands to clasp the face of her mother, who stoops over to kiss her. The artist contributed also a nearly life-size three-quarters portrait of the Right Hon. A. J. Balfour, Chief Secretary for Ireland.

P. H. Calderon's "St. Elizabeth of Hungary's Great Act of Renunciation" has probably created more talk than any other picture of the year, not so much on account of its merits as of its subject. The queen, entirely nude, having thrown off all her garments in token of her renunciation of the world, is kneeling in self-abasement before an altar, in presence of a group of grim monks and ladies grouped behind her. The picture, notwithstanding the protests of Cardinal Manning and others, who contend that St. Elizabeth's act involved the renunciation of only that part of her costume which savored of the world, has been bought with the Chantrey fund.

Briton Riviere's "A Mighty Hunter before the Lord" is a triptych. In the central panel an Assyrian monarch stands in a chariot drawn by white horses, which the driver, beside the king, urges to their greatest speed across a sandy waste. The king, having shot a lioness, has

slung his bow on his shoulder and is defending himself with a spear against a furious lion that clings to the back of the chariot, roaring as it is dragged along. The wings of the triptych show the lion's side of the question. In one a lioness lies dying, while her mate tenderly licks the bleeding wound; in the other the lion stands beside his dead, roaring her requiem, while another lion comes down the hillside.

J. W. Waterhouse's "Ulysses and the Sirens" shows the ship in a narrow rock-bound cleft of the Mediterranean, with the wanderer himself bound to the mast while his companions, with ears carefully guarded against the sirens' songs, busily ply their oars. Close around the vessel are gathered the sirens, with the heads of beautiful girls and the bodies of birds, doing their best to charm the wanderers.

John S. Sargent's "La Carmencita," representing the well-known Spanish dancer in a garish dress, was one of the most noteworthy pictures of the exhibition. A "Portrait of Mrs. M——," by the same artist, attracted almost as much attention.

J. C. Hook's "Summer Pleasures" shows an expanse of golden-white sand, with the sea beyond and black hulls and fishing boats at anchor. At the edge of the water a lad is loitering in a boat hauled up on the sand, and in the foreground a girl sits on a rock, with her bare feet in a pool, while beside her a naked child plays with a wreath of tangled weeds.

Val Prinsep's "The Emperor Theophilus chooses his Wife" is an episode from the history of the Eastern Empire. The emperor, attended by nobles and ecclesiastics in splendid attire, inspects, in a chamber of the imperial palace, a bevy of damsels, one of whom he is expected to choose for his empress.

F. D. Millet's "The Widow" shows a matron at the head of a table, her only companion a little child, who is peeling an orange. On the wall is the portrait of the husband and father, who fell at Waterloo.

Noteworthy among the sculptures are the marble version of Sir Frederick Leighton's "Athlete struggling with a Python," to go to the Copenhagen Gallery; Harry Bates's "Hounds in Leash"; Thomas Brock's "Genius of Poetry"; and T. Nelson MacLean's "Fountain and Statuette: La Source."

London: New Gallery.—The Guelph Exhibition at this gallery was a disappointment, as compared with the Tudor or Stuart exhibitions of previous years. There were a few good examples of Reynolds, Gainsborough, Hogarth, Romney, Lawrence, and Hoppner, and a fine collection of miniatures. There were also good collections of plate and china, ceramics and sculptures, painted fans, arms, dresses, manuscripts and books, a few coins and medals, and drawings and engravings.

Among the principal attractions at the summer exhibition at the New Gallery were two important works by Burne-Jones, who contributed nothing this year to the Royal Academy. "The Star of Bethlehem," painted for the Birmingham gallery, represents the adoration of the Magi. The figures are nearly life size. The Virgin, child, and Joseph are under a thatched shed at the left, the Virgin seated in the straw with the

child in her lap, and Joseph standing behind. On the right an angel introduces the Magi—Caspar in a blue mantle, Balthasar of Ethiopia in greenish blue, and Melchior in steel armor. The background is a wooded glade, with a vista through the center. The second picture, "Sponsa de Libano," a large decorative work in water color, illustrates the virgin bride of the Song of Solomon. The spouse wanders pensive in a garden of lilies beside a pellucid stream, while the North and South winds, depicted as two fair youths, float in the air behind her, the gale drawing their blue and purple mantles into loops about their shoulders.

Alma-Tadema's "Love in Idleness" depicts two Roman damsels resting on rugs and cushions spread on a pavement of colored marbles and mosaics, close to a fountain, musing in silence while the soft light of evening fades from the terrace, which overlooks a blue sea and an island with white cliffs.

W. B. Richmond's "Amor omnia Vincit" represents nude Venus, attended by the Graces richly clad, who hold white robes for her use, standing beside a bath, with a sunset glow in the background through tall cypresses and the moon rising above the sea.

Mr. Poynter's "Knucklebones," a small work, shows two nude Roman girls seated on a mosaic pavement beside a bath filled with clear water, which reflects the sky. One rests on her toes with her knees bent under her; the other has just tossed the bones from her knuckles and with an outstretched forefinger calls out the number to her antagonist.

Mr. Strudwick's "Elaine" depicts that maiden, in ivory-white attire, seated upon a coffer in her tower chamber, with Sir Lancelot's escutcheon hanging on a *prie-dieu* before her.

J. W. Waterhouse's "Circe" shows the witch enthroned in front of a mirror, holding up her cup and rod as if before her victims, several of whom, in the guise of beasts, fawn round her seat.

London: Art Sales.—The sale of the Haldon House collection, made by the late Lord Haldon, on Feb. 28, brought more than £8,000 for 46 pictures, mostly of the Dutch school. W. Van de Velde, "Departure of Charles II from the Scheldt, 1660," brought £1,963; Jan Weenix, "A Grand Garden," £1,102; Claude, "Embarkation of St. Paulina," £913; J. Ruysdael, "River Scene," £630; Rembrandt, "Elderly Woman," £535. On the same day Sir Joshua Reynolds's "Mrs. Butler" fetched £4,725, said to be the highest price ever obtained at auction for a Reynolds.

On April 25 were sold the modern pictures of the Marquis de Santuree. Among them were: Alma-Tadema, "An Audience with Agrippa" (1861), £2,672; a portion of the "Vintage Festival" (1871), £2,372; "Un Amateur Romain" (1869), £2,782; Fortuny, "The Moorish Guard," £1,575; Gérôme, "The Augurs," £798.

On May 2 the pictures and drawings from the London house of H. W. F. Bolekow, the late ironmaster, were sold, his collection at Marton Hall, Middlesborough, having been disposed of in 1888. The present sale excited almost as much interest as the preceding one, the collection fetching in the aggregate £69,380. The water-color drawings brought £15,475, and seventeen of the pict-

ures £45,643. Among the best prices obtained for water colors were: Fortuny, "Interior of a Morocco Carpet Warehouse," £1,050; Meissonier, "The Antechamber," £840; Turner, "Eridge Castle," £966; "Llangollen," £509; "Edinburgh," £913; "Rivaux Abbey," £960. For paintings in oil: Meissonier, "The Sign Painter," £6,772 (owner paid artist £8,400 for it); Troyon, "Going to Market," £4,930; Rosa Bonheur, "Mountainous Landscape" (1870), £1,260; Rosa Bonheur and Dubufe, "Rosa Bonheur," £1,312; Gérôme, "Carpets for Sale," £682; T. Webster, "Roast Pig," £1,207 (Gillott sale, 1872, £3,722); J. Linnell, "The Hillside Farm" (1849), £2,100; John Phillip, "Grape-seller of Seville" (1862), £2,410; Landseer, "Return from Deer-stalking" (1827), £1,785; Breeze, "Retriever with Game" (1842), £4,326; C. Stanfield, "Bay of Naples" (1867), £1,050; D. Roberts, "Interior of St. Peter's, Rome" (1862), £1,470; W. Collins, "The Minnow Catchers," £1,575; W. Müller, "The Chess-players at Cairo," £3,202 (Gillott sale, 1872, £3,950; Hough sale, 1874, £4,052); Turner, "Walton Bridges," £7,450 (Gillott sale, £5,250); Hogarth, "The Gate of Calais" (The Roast Beef of Old England), £2,572.

On May 23, at the sale of the collection of William Holdsworth, of Ayr, were sold the following: Turner, "Boats and Dutch Men-of-war," £1,312; "Whale Ship," £945; Gainsborough, "The Mushroom Girl," £2,572 (Dupont sale, 1872, £525); Millais, "Murthly Water," £1,522.

On June 6 was sold the collection of modern pictures of the late Charles P. Matthews, of Havering-atte-Bower, Essex, consisting of 125 lots. Among the noteworthy pictures were: Holman Hunt, "Finding of the Saviour in the Temple," £3,570. Sir F. Leighton, "Music Lesson," £2,467; "Iostephane," £1,071. J. F. Lewis, "Reception," £892; "Intercepted Correspondence," £1,764; "Turkish School, Cairo," £1,785; "The Seraff," £1,785. Millais, "A Flood," £1,680; "The Ransom," £840. Müller, "Island of Rhodes," £3,465 (Watts sale, 1885, £1,945). C. Stanfield, "Mazorbo and Torcello," £1,050. W. Frith, "Charles II's Last Sunday," £1,732. J. C. Hook, "Jetsam and Flotsam," £1,785; "Clearing the Nets," £945; "Hoisting Sail," £1,785; "Trawlers," £850; "Sea Urchins," £777; "From under the Sea," £945; "Brimming Holland," £1,701.

On June 20 and 23 was sold the collection of the late Miss James, including some fine Watteaus and Watteau and Turner drawings. A Watteau, "L'Occupation selon l'age," £5,460; "L'Accord parfait," £3,675. Meissonier, "La Vedette," £1,102 (sold, 1889, for £1,680); "Les Mousquetaires," £997 (1889, £1,312). P. Nasmyth, "Leigh Woods," £1,491. J. Linnell, "The Forest Road," £1,260. Rembrandt, "Jew Rabbi," £840.

On July 11 was sold the collection of the late Cavendish Bentinck, M. P., realizing more than £19,000. Among the pictures were: Reynolds, "Fanny Kemble" (1784), £2,960; J. Ruysdael, "Wooded Landscape" (figures by Berchem), £1,470.

Miscellaneous.—The Chantrey fund purchases for 1891 are as follow: P. H. Calderon's "St. Elizabeth of Hungary's Great Act of Renunciation," bought for £1,200; Harry Bates's

marble statue "Pandora," £1,000; Harry Dixon's water color "Lions," £100; and J. W. North's "The Winter Sun in the Wild Woodland," £315. Since the bequest was made, 58 works have been bought, of which 18 only were by members of the academic body.

An anonymous donor, generally understood to be Mr. Henry Tate, has given the Government £80,000 to found a National Gallery of British Art. The Government has granted a site for it at South Kensington, with a frontage of 300 feet on Exhibition Road.

The corporation of Glasgow has paid Mr. Whistler £1,000 for his portrait of Carlyle—the old man against a gray wall, with a rug over his legs, and his large, soft hat lying on his knee.

George Reid, R. S. A., was elected, Aug. 8. President of the Royal Scottish Academy, in succession to the late Sir William Fettes Douglas. Mr. Reid is a pupil of the Trustees' Academy, Edinburgh, of Israels and Mollinger in Holland, and of Yvon in Paris.

An exhibition of examples of the English pre-Raphaelites was held in the Birmingham Museum in October. Works by Ford Madox Brown, Holman Hunt, Rossetti, Sir John Millais, Burne-Jones, and others were shown. The permanent collection at Birmingham has been enriched by the purchase of Burne-Jones's "Star of Bethlehem," Watts's "Roman Lady," Millais's "The Widow's Mite," and J. F. Lewis's "The Doubtful Coin."

The Royal Hibernian Academy held its sixty-second exhibition in Dublin in April. It was in all respects equal to any of its previous ones.

A statue of John Bright, by Bruce Joy, was uncovered, on Oct. 10, in the square in front of Manchester Town Hall. Another, by Hamo Thornycroft, will shortly be unveiled at Rochdale.

The sale of the Post collection, Amsterdam, April 14, realized 273,113 florins, or about \$110,000. Among the best prices obtained were: Rosa Bonheur, "La Fenaison," 18,150 florins; Corot, "Le Ravin," 15,290; J. Israels, "Jour de Repos," 14,410; Jules Dupré, "Vue de Forêt," 13,860.

Prince Borghese, of Rome, has sold to M. A. de Rothschild the portrait of "Cesar Borgia," by Raphael, for 600,000 francs. The prince has replaced this famous picture by four other canvases: "Crucifixion," by Fiorenzo di Lorenzo; "St. Stephen," by Francia; "Madonna," by Lorenzo Credi; and an early work by Lotto.

The international exhibition of works of art at Berlin, organized by the Berlin Artists' Union to celebrate their fiftieth anniversary, was opened, May 1, by the Emperor William and the Empress-dowager Frederick, with a brilliant ceremony. Between four and five thousand works were contributed by artists of almost all countries excepting France, the American colony in Europe being well represented. The outer hall was devoted to sculpture. It was in every respect a remarkable exhibition. Among the American exhibitors to whom medals were awarded are Frederick H. Bridgman, Jules Stewart, Walter McEwen, and Messrs. Forbes, Stanhope, Story, and Shannon.

An international exhibition of painting was opened in Stuttgart in March by Prince William of Wurtemberg. Works were contributed by

German, Austrian, Belgian, Dutch, Italian, Spanish, and French artists. The catalogue represented 369 numbers, of which 11 were sculptures.

A statue of William Tell, by Antonin Mercier, has been erected at Lausanne, Switzerland, through the munificence of M. Osiris, in commemoration of the hospitality extended by the Swiss, in 1871, to the army of Bourbaki.

The first exhibition of paintings ever held in Egypt, at least in modern times, was opened in Cairo, Feb. 20, under the presidency of Théodore Ralli, a Parisian artist. It was inaugurated by the Khedive, in presence of the diplomatic corps.

At the Barcelona Fine Arts Exhibition, opened in May, four pictures contributed by Jan Van Beers were objected to by the jury of admissions on the ground of immodesty. The controversy was finally settled by putting them in a separate room, where no one less than thirty years of age was admitted.

At the Moscow Exhibition the fine-art gallery contained 800 oil pictures, pastels, and engravings, and 120 statues.

The new Museum at Vienna, in which has been grouped all the collections of the Crown, including those of the Belvedere, Ambras, Arsenal, Schatzkammer, Cabinet of Antiquities, etc., was solemnly inaugurated, Oct. 17, by the Emperor, in presence of the archdukes and a large number of other dignitaries. The building, which is situated on the Ringstrasse, nearly opposite the imperial palace, is one of the finest in Europe, and its collected treasures will take rank with the most important collections of the world.

New York.—The sixty-sixth annual exhibition of the Academy of Design (April-May) was superior to many of its predecessors. Among the noteworthy contributions were: Mr. Hovenden, "Breaking the Home Ties," an awkward country youth, about to go forth into the world, taking leave of his mother. Mr. Dewing, "Summer," four maidens in modern costume dancing in a row, while a fifth plays a harp. Will H. Low, "A Girl in Rose," a chaste semi-nude figure standing in a wood. Thomas Moran, a study of icebergs in mid-ocean. Edward Moran, "Notre Dame de Paris," a scene on the night of the "Fête des Étrangers," with the bridge and church illuminated; and "Funeral of John Ericsson—New York Bay." W. T. Trego, "The Color Guard," a French scene. Edwin H. Blashfield exhibited a showy picture representing a lady in white reclining on cushions. Among portraits were Daniel Huntington's "Professor Drisler," John S. Sargent's "Cornelius Vanderbilt," and others by Benjamin C. Porter, Carroll Beckwith, and William M. Chase.

The Hallgarten prizes, which were not awarded last year, were again passed, because fifty of the season's exhibitors could not be got together to consider them.

The tenth autumn exhibition of the National Academy (Nov. 23 to Dec. 19) was noteworthy for the large number of new names in the catalogue. Of the older exhibitors, Walter Shirlaw's "Harmonies," an old man playing a violin, Kenyon Cox's nude "Sketch," Remington's "Right Front into Line," and Childe Hassam's "Copp's Hill Burial Ground," attracted notice.

John Rogers, famous for statuettes, contributed a colossal group entitled "Eliot preaching to the Indians." The sales realized about \$10,000.

The American Water-Color Society held its twenty-fourth annual exhibition at the Academy of Design in February, with 661 pictures, a larger number than usual. Among the exhibitors were Arthur Parton, Bolton Jones, Edward Moran, Mrs. Nicholls, Miss Greatorex, and Childe Hassam. The exhibition of the New York Etching Club was held at the same time in the corridor.

The second annual exhibition of the New York Water-Color Club was held at the Fifth Avenue Art Galleries in December. Among those represented were Childe Hassam, George Inness, L. Crapo Smith, John A. Fraser, Miss Rose Clark, Mrs. Rosina Emmett Sherwood, Charles A. Vanderhoff, and Henry Sandham.

The Society of American Artists held its fifteenth annual exhibition at the Fifth Avenue Art Galleries, with between two and three hundred canvases, many of them very encouraging for the future of American art. Among the contributors were John S. Sargent, Robert Reid, and Abbott N. Thayer, who sent portraits, and Henry Walker and West Clineinst, figure pieces.

New York Art Sales.—The sale of the Seney collection, in February, brought, in the aggregate, about \$664,000. Among the highest prices were: J. F. Millet, "Waiting," \$40,500; "Apple Harvest," \$6,500. Delacroix, "Tiger and Serpent," \$11,000; "Lion in Mountains," \$3,925. L. Knaus, "Old Witch," \$12,600; "Child's Funeral," \$10,000; "Thoughts of Better Days," \$5,300. Gérôme, "First Kiss of the Sun," \$6,000. Diaz, "After the Storm," \$4,350; "Virgin and Child," \$8,600. Rosa Bonheur, "Choice of the Flock," \$5,100. Meissonier, "Playing Bowls at Antibes," \$15,000; "Deliberation," \$7,600. Troyon, "Sheep in Forest," \$11,100; "Hounds," \$12,000. Corot, "Dance of Nymphs," \$7,100; "Bathing Boys," \$4,600. Dupré, "Sunset," \$9,100. Van Marcke, "Rich Pasturage," \$7,490. Daubigny, "River Front," \$4,700; "Village on the Oise," \$6,000. Israels, "The Frugal Meal," \$5,050.

The Aaron Healy collection, sold in February, brought \$130,855 for 70 modern paintings. Best prices: Daubigny, "Springtide," \$8,550; "Landscape," \$4,100; "Moonrise," \$6,850. Corot, "Morning," \$2,600. Bouguereau, "Far from Home," \$3,150; "Fraternal Love," \$5,200. Diaz, "Path in Woods," \$4,800; "Forest of Fontainebleau," \$1,600. Gallait, "Last Honors to Egmont and Horn," \$10,000. J. F. Millet, "Shepherdess," \$5,600. Knaus, "The Truant," \$5,050; "After the Bath," \$2,550.

The sale of the Vasilii Verestchagin collection brought a total of \$81,789, of which \$68,545 was obtained for 111 paintings. The picture "Crucifixion by the Romans" was sold for \$7,500; "Blowing from Guns in British India," \$4,500; and "The Future Emperor of India," \$4,125.

Miscellaneous.—The Astor Library has the nucleus of an art collection in the gift by William Waldorf Astor of 22 paintings, mostly of the modern French and German schools, from the gallery of his late father. Among them are Hector Leroux's "École de Vestales" (Salon, 1880), Robert Fleury's "Charlotte Corday," and

two Meissoniers, "L'Escalier" and "Condottier Français."

The Metropolitan Museum has received, through the munificence of Mr. Marquand, 7 paintings of the Dutch school—two portraits by Frans Hals, a portrait of Cranmer (?) attributed to Holbein, "The Old Mill" by Rembrandt, a "Landscape with Cattle" attributed to Cuyp, a portrait by Maroni, and "The Music Lesson" by Gabriel Metsu. The opening of the museum on Sunday afternoons was apparently a popular success, the average attendance being nearly 10,000 a day.

One of the most remarkable pieces of art work ever produced is a sitting statue, heroic size, of Washington Irving, which was completed in 1891 by a blind sculptor, Johnson M. Mundy, of Tarrytown, N. Y. Under certain conditions of light, with an opera-glass, Mr. Mundy can see a little; but his work on this statue was all done by the sense of touch. The plaster model, a view of the head of which is here presented, is at Tarrytown; the bronze casting has not yet been made.

Philadelphia.—The sixty-first annual exhibition of the Academy of Fine Arts was one of the largest and best in the history of the society. Many New York artists were represented, some of them by more pictures than were contributed to their home exhibition. The Temple gold medal was awarded to Abbott H. Thayer for his "Winged Figure," a girl angel with wings and drapery of white against a blue background. The Temple silver medal was given to Kenyon Cox for his portrait of a young lady.

Chicago.—The Art Institute's fourth annual exhibition in November was of exceptional excellence. It comprised 250 paintings and 14 pieces of sculpture. Of the paintings, 24 were sent from Paris, representing the American colony there. Thirty-nine of the exhibitors were Chicago artists, and most of the remainder were from New York studios. The J. W. Ellsworth prize of \$300 for the best work by an American artist painted in America was awarded to Frank Benson for his "Twilight," and the Art Institute prize of \$250 for the second best to Gari Melchers for "The Pilots." The latter picture was painted in Holland and not eligible for the first prize.

FLORIDA, a Southern State, admitted to the Union, March, 3, 1845; area, 58,680 square miles. The population, according to each decennial census since admission, was 87,445 in 1850; 140,424 in 1860; 187,748 in 1870; 269,493 in 1880, and 391,422 in 1890. Capital, Tallahassee.

Government.—The following were the State officers during the year: Governor, Francis P. Fleming, Democrat; Secretary of State, John L. Crawford; Comptroller, William D. Bloxham; Treasurer, Frank J. Pons; Attorney-General, William B. Lamar; Superintendent of Public Instruction, Albert J. Russell; Commissioner of Agriculture, Lucius B. Mombwell; Railroad Commissioners, George G. McWhorter, who died on May 21, Enoch J. Vann, and William Himes (on June 13 the Railroad Commission was abolished by act of the Legislature): State Board of Health, Richard P. Daniel, William B. Henderson, William K. Hyer; Chief Justice of the Supreme Court, George P. Raney; Associate Justices, Milton H. Mabry and R. F. Taylor. Justice Mabry was elected in November, 1890, to succeed Justice A. E. Maxwell. Justice Taylor

was appointed by the Governor late in 1890 to fill the vacancy caused by the resignation of Justice H. L. Mitchell, who accepted a seat on the bench of the United States Circuit Court.

Population by Races.—The following table shows the white and colored population of the State in 1880 and 1890, according to the Federal census:

COUNTIES.	WHITE.		COLORED.	
	1890.	1880.	1890.	1880.
Alachua.....	9,823	6,446	13,310	10,016
Baker.....	2,575	1,660	158	643
Bradford.....	5,919	4,822	1,897	1,290
Brevard.....	2,759	1,379	588	54
Calhoun.....	1,127	1,164	554	396
Citrus.....	2,052	.....	812	.....
Clay.....	3,626	2,265	1,527	573
Columbia.....	6,380	4,820	6,547	4,769
Dade.....	687	190	89	67
De Soto.....	4,808	.....	141	.....
Duval.....	11,895	8,550	14,573	10,850
Escambia.....	11,416	6,854	8,765	5,302
Franklin.....	1,943	1,199	1,365	592
Gadsden.....	4,430	4,114	7,464	8,055
Hamilton.....	5,385	4,472	3,172	2,313
Hernando.....	1,555	3,319	891	929
Hillsborough.....	11,951	4,599	2,960	915
Holmes.....	4,146	2,043	190	106
Jackson.....	6,991	5,637	10,553	8,735
Jefferson.....	3,502	3,397	12,255	12,668
Lafayette.....	3,443	2,268	242	173
Lake.....	6,745	.....	1,859	.....
Lee.....	1,334	.....	80	.....
Leon.....	3,054	2,822	14,698	16,840
Levy.....	4,408	3,732	2,178	2,035
Liberty.....	819	814	633	543
Madison.....	5,494	5,609	8,322	9,184
Manatee.....	2,710	3,373	185	135
Marion.....	9,225	4,741	11,570	8,305
Monroe.....	12,721	7,659	6,085	8,197
Nassau.....	3,947	3,075	4,342	3,547
Orange.....	9,045	5,595	3,594	1,023
Osceola.....	2,452	.....	473	.....
Pasco.....	3,865	.....	284	.....
Polk.....	7,097	3,033	808	122
Putnam.....	6,355	3,845	4,828	2,416
St. John.....	5,439	3,170	3,205	1,363
Santa Rosa.....	3,701	4,773	2,260	1,372
Sumter.....	3,563	3,501	1,499	1,185
Suwannee.....	5,526	4,021	4,998	3,140
Taylor.....	1,967	2,114	155	165
Volusia.....	5,984	2,756	2,432	533
Wakulla.....	1,738	1,563	1,379	1,160
Walton.....	4,065	3,855	751	516
Washington.....	5,099	3,171	1,327	918
The State.....	224,461	142,605	166,678	126,690

In 1890 there were also in the State 101 Chinese, 14 Japanese, and 168 Indians.

Finance.—The following is a summary of the operations of the State treasury for the two years ending Jan. 1, 1891: Balance on Jan. 1, 1889, \$109,813.08; total receipts for the year ensuing, \$680,528.19; total expenditures, \$713,251.20; balance on Jan. 1, 1890, \$77,090.07; total receipts for the year ensuing, \$760,128.65; total expenditures, \$751,356.39; balance on Jan. 1, 1891, \$85,862.33. The general revenue fund statement for the two years included in the above summary is as follows: Balance on Jan. 1, 1889, \$33,053.59; receipts for the year ensuing, \$513,760.12; expenditures, \$538,912.80; balance on Jan. 1, 1890, \$7,900.91; receipts for the year ensuing, \$550,303; expenditures, \$550,078.90; balance on Jan. 1, 1891, \$8,125.01. Of the general revenue fund receipts for the year 1889, the sum of \$262,795.26 was derived from the tax on property, \$148,343.08 from license fees, and \$95,500 from borrowed money. For



HEAD OF WASHINGTON IRVING.

FROM JOHNSON M. MUNDY'S STATUE.

the year 1890 the sum of \$395,930.30 was derived from taxes, and \$150,119.94 from license fees. The expenditures from the fund for the former year included \$129,783.85 for jurors and witnesses, \$49,410.64 for criminal prosecutions, \$64,943 for interest on the State debt, \$27,589.29 for pensions, \$67,255.61 for expenses of the legislative session, \$42,031.67 for maintenance of lunatics, \$29,558.53 for expenses of collecting revenue, \$20,930.30 for salaries of the executive department, and \$29,412 for salaries of the judicial department. For the latter year the leading expenses were as follow: \$98,234.89 for jurors and witnesses, \$88,073.86 for criminal prosecutions, \$65,026 for interest on the State debt, \$36,669.05 for pensions, \$43,512.16 for maintenance of lunatics, \$53,927.44 for expenses of collecting revenue, \$21,450 for salaries of the executive department, \$37,292.72 for salaries of the judicial department, and \$11,177.34 for expenses of the State Board of Health. Since the adoption of the Constitution of 1885, the State expenses have largely increased from several causes, the most important being the constitutional provision that the State, instead of the counties, shall bear the expense of criminal prosecutions. This provision was presumably made with the hope that county taxation would be to that extent reduced. But such a result has never been realized, as the average rate of county taxation was less in 1884, when the counties paid the expenses of their own criminal prosecutions, than in 1890, when the State bore the burden. Further causes of increase are the laws of recent enactment pensioning Confederate soldiers, establishing a State board of health, and increasing the pay of jurors from \$1.25 to \$2.00 a day. The last-mentioned law added about \$40,000 to the State expenses for 1890. As a result of these increased demands upon the State treasury, it was found necessary early in 1889 to borrow \$100,000.

On Jan. 1, 1891, the bonded State debt, (deducting bonds held in the State sinking fund) amounted to \$1,032,500, of which \$673,500 is held by the various State educational funds, leaving only \$359,000 in the hands of individuals.

Valuations.—The assessed valuation of property in the State for 1890 is as follows: Value of town and city lots, including improvements, \$21,423,885; value of other land and improvements, \$39,350,931; value of animals, \$5,245,311; value of other personal property, \$10,906,811; value of railroads, \$14,877,014; value of telegraph lines, \$179,514; total valuation, \$91,983,466. Included in the assessment are 23,866,484 acres of land, 43,558 horses and mules, 463,667 meat cattle, 107,842 sheep and goats, and 198,132 swine. The State tax assessed in 1890 upon this valuation was as follows: General revenue, $4\frac{1}{2}$ mills, \$414,137.06; school tax, 1 mill, \$92,038.01; immigration tax, $\frac{1}{2}$ mill, \$11,605.57; Board of Health tax, $\frac{1}{2}$ mill, \$43,301.59; total, \$561,082.23. For 1891 the State tax rate is as follows: General revenue, $4\frac{1}{2}$ mills; schools, 1 mill; Board of Health, $\frac{1}{2}$ mill; total, $5\frac{1}{2}$ mills.

Legislative Session.—The regular biennial session of the Legislature began on April 7 and ended on June 5. A bitter and prolonged contest over the choice of a successor to United

States Senator Wilkinson Call marked the proceedings of the session and seriously impeded the work of legislation. The most important measures passed relate to State finances. A new revenue law was enacted, modifying in numerous details the method of assessing and collecting taxes and changing the amount of licenses to be levied on various occupations, so as to secure a greater revenue, but leaving the subjects of taxation practically unchanged. The license fee of liquor dealers was fixed at \$500 a year for each place of business, and for distillers and brewers at \$100 a year. Retrenchment was effected in State expenses by the abolition of the Bureau of Immigration and by the repeal of the law creating the Board of Railroad Commissioners. A new source of revenue was found in the phosphate deposits in the navigable waters of the State. By an act approved June 9 all persons or companies mining or removing phosphates from such waters are now required to pay the following royalties to the State: Fifty cents a ton for all phosphate deposits mined or removed analyzing 55 per cent. or less of bone phosphate of lime; 75 cents a ton for all deposits analyzing over 55 and not over 60 per cent. bone phosphate of lime; and \$1 a ton for all deposits analyzing over 60 per cent. The interests of the State in its phosphate deposits are placed under the control of a board of phosphate commissioners, consisting of the Governor, the Comptroller, and the Attorney-General. This board has authority to grant, for a term not exceeding five years, the exclusive right to remove phosphate rock from the navigable waters of the State, on certain conditions stated in the act.

The State tax for general purposes, to be levied in each of the years 1891 and 1892, was reduced from $4\frac{1}{2}$ to $4\frac{1}{4}$ mills, and the Governor was authorized to reduce the rate still further, if the revenue from other sources should be large enough to justify such reduction.

The Governor, the Treasurer, and the Comptroller were authorized to borrow not over \$200,000, to pay the outstanding obligation of the State for \$100,000 borrowed under the act of 1889, and to pay any debts incurred under appropriations of this or former sessions.

One hundred acres of State land were granted to the Old Confederate Soldiers' and Sailors' Home Association, as a site for a proposed home for ex-Confederates, and a further grant of 50,000 acres was made for the purpose of providing a fund for the support and maintenance of the institution, after suitable buildings have been constructed.

A new road law was passed, regulating the maintenance and repair of public roads and bridges.

The revision of the public statutes, prepared by a commission appointed pursuant to an act of the last Legislature, was submitted at this session and adopted as the law of the State.

No appropriation was made for the World's Fair in 1893. Other acts of the session were as follow:

Declaring all rates of interest above 10 per cent. to be usurious.

Prohibiting pool-selling, except that associations for driving or racing may sell pools between the first day of November and the first day of May, provided

the sale is made on the track and on days in which races take place. Such associations shall pay to the State, for the use of the school fund, 3 per cent. of the gross admission receipts to any race at which pools are sold.

To prohibit the sale and disposing of cigarettes, smokettes, and cigarette paper to persons under eighteen years of age.

For the better prevention of riots and mobs.

Securing to inmates of insane asylums in the State their postal rights.

Making atheists, agnostics, and persons who do not believe in future rewards and punishments competent witnesses.

Prescribing a short form for warranty deeds.

To prohibit the killing of any crane, egret, ibis, curlew, or heron for the purpose of sale or commercial traffic.

Providing that buildings hereafter constructed for public entertainments shall have the shutters to all entrances open outwardly and be so arranged as to allow persons readily to escape therefrom.

Declaring the anniversary of the birth of Jefferson Davis a legal holiday.

Authorizing Duval County to improve the navigation of the St. John's river, and to issue bonds in aid thereof.

Senatorial Contest.—Early in 1890 the opponents of United States Senator Call began an aggressive campaign to prevent his re-election. They circulated in the newspapers numerous charges against his public record, and sought to secure the nomination of legislative candidates who were hostile to him. The senatorial question thereby became a leading issue in the preliminary Democratic meetings for selection of candidates. Only partial success attended the movement, as more than half of the legislators chosen at the November election proved to be supporters of the Senator. After the Legislature convened, a caucus of Democratic members was called to meet on April 12. The friends of Senator Call elected the presiding officer, and after a long discussion the customary rule was adopted that a two-third vote should be necessary to secure a caucus nomination. On the first ballot Call received 60 votes and ex-Gov. W. D. Bloxham 35. After a second ballot had been taken, the opponents of Senator Call, nearly all of whom were adherents of the Farmers' Alliance, held a meeting and decided to support James G. Speer as their candidate. When the caucus re-assembled on April 15, the name of ex-Gov. Bloxham was accordingly withdrawn, and the third ballot resulted as follows: Call, 59; Speer, 37; Bloxham, 2. For nearly three weeks, and through about 50 ballots, the strength of the two candidates remained substantially unchanged. Early in May the Alliance members, finding it impossible to elect Speer, decided to transfer their support to D. H. Mays, but he too failed to break the column of Call's supporters. Meanwhile, in the Legislature a formal ballot had been taken each day since April 21, according to law, both factions agreeing to scatter their votes so as to prevent a choice until the caucus should agree upon a candidate. Meetings of the caucus were held day after day without any marked changes, Call being unable to secure a two-third vote, but having a clear majority. The eighty-sixth ballot, on May 25, gave Call 52 votes, Mays 42, and Bloxham 2. There being no prospect that either faction would yield, the Call men, after this ballot, voted to dissolve the caucus and

transfer the contest to the Legislature, where a majority vote only would be necessary to elect. The anti-Call members then adopted the policy of refusing to attend the joint session of the Legislature, and on May 26 only 15 Senators and 39 members of the House were in attendance. This was a minority of the Senate and a majority of the House. It was also a majority of the two Houses in joint session. On this day Call received 51 votes and Mays 1, and the presiding officer declared Call elected. The anti-Call members thereupon filed with Gov. Fleming, who is required by law to certify to the election of United States Senators, a statement showing the circumstances under which the joint session of May 26 was held, and arguing that there was no election of Senator because a quorum of the Senate was not present at such session. The Governor, after consideration of the legal questions involved, issued an address to the people, dated Aug. 4, in which he decided that, inasmuch as a quorum of the Senate was not present, the election of May 26 was of no effect, and that he could not issue a certificate of election to Senator Call. Pursuant to this opinion, the Governor, early in September, appointed ex-Congressman Robert H. M. Davidson to be United States Senator to fill the vacancy caused by the failure of the Legislature to elect. A new difficulty now arose, as the Secretary of State, John L. Crawford, who did not approve the Governor's course, refused to affix the seal of the State or to countersign the certificate of appointment issued to Davidson. The Governor then called upon Attorney-General Lamar to bring a writ of mandamus in behalf of the State against Secretary Crawford, to compel him to perform his duty in this regard. The Attorney-General declined to obey this order, on the ground that the person interested, ex-Congressman Davidson, should bring the suit rather than the State. The Governor himself then took out a writ of mandamus against the Secretary, in his own name, in behalf of the State, and the case was heard by the Supreme Court late in October. A decision was rendered in November, to the effect that the duty of the Secretary of State in signing the certificate of appointment and affixing the seal was purely ministerial, and did not commit him to any recognition of the legality of such appointment, and that mandamus should issue in this case. Secretary Crawford thereupon affixed his signature to the commission and sealed it, pursuant to the order of the court. The United States Senate must now decide as to the rights of the two claimants.

Education.—For the years ending Sept. 30, 1889, and Sept. 30, 1890, the public-school statistics are as follow:

ITEMS.	1888-'89.	1889-'90.
Number of white schools	1,691	1,746
Number of colored schools	598	587
White children of school age	60,782	60,782
Colored children of school age	52,865	52,865
White children enrolled in public schools	53,608	55,191
Colored children enrolled in public schools	32,782	37,281
Average daily attendance	63,652	64,819
White teachers	1,716	1,849
Colored teachers	694	661

For the year 1888-'89 the amount available for the support of public schools was \$476,490, derived from the following sources: From the county tax for schools, levied by the various counties, \$363,490; from the State one-mill tax, \$76,000; from interest on the State Common-school fund, \$37,000. The amount available in 1889-'90 was \$516,532.70, derived as follows: From the county tax, \$399,755.56; from the State one-mill tax, \$84,103.31; from interest on the State Common-school fund, \$32,673.83. In 1889-'90 the sum of \$336,405.52 was expended for teachers' wages. The average length of the school year was 120 days. During the year 79 new school-houses were erected, at a cost of \$32,554.62.

The State Agricultural College, at Lake City, had an attendance of 160 pupils on Jan. 1, 1890; but the number on Jan. 1, 1891, had fallen to 103, as a result of raising the standard of admission. At the West Florida Seminary 70 students were in attendance on Jan. 1, 1891, and at the East Florida Seminary 107. On the same date there were 84 pupils at the normal college for white teachers at De Funiak Springs, and 74 at the normal college for colored teachers at Tallahassee. The Institute for Deaf and Blind at St. Augustine cares for about 28 pupils.

Charities.—At the State Insane Asylum, on Jan. 1, 1890, there were 249 patients, of whom 127 were males and 122 females. During the year following 64 persons were admitted and 74 discharged, leaving 239 inmates on Jan. 1, 1891, of whom 118 were males and 121 females. Additions to the present buildings are in process of construction.

State Prisons.—For the two years ending Jan. 1, 1891, the population of the State Prison shows the following changes: Convicts on Jan. 1, 1889, 319; received during the year following, 269; discharged, 200; remaining on Jan. 1, 1890, 388; received during the year 1890, 233; discharged, 212; remaining on Jan. 1, 1891, 409. Since Jan. 1, 1890, all State convicts have been leased to E. B. Bailey, of Monticello, who has sublet a portion of them for work on turpentine farms, the remainder being employed during 1890 at farming, and during this year at phosphate mining.

Confederate Pensions.—Under the pension law, approved June 8, 1889, 503 claims had been filed up to March 10 of this year, of which 292 had been allowed by the Governor. Of the total number of claims, 105 were filed by widows, 69 of which have been allowed. Nearly all of the male pensioners receive from \$90 to \$100 annually, and widows receive \$150 annually.

World's Fair Convention.—The Legislature having failed to pass a World's Fair appropriation bill, a State convention was called, to meet at Orlando on Oct. 7, to devise other ways and means for securing a suitable exhibit of the resources of the State at Chicago in 1893. Only 14 of the 45 counties in the State were represented, by 111 delegates. Gov. Fleming presided. The convention decided to appoint a committee of 13 directors from the State at large, who should have entire management of the Florida exhibit. Each county was requested to elect a county executive committee, who should co-operate with the State committee. It was further provided that the sum of \$100,000

should be apportioned and raised from the several counties, on the basis of the tax assessments of 1891, each county committee adopting its own method of raising the amount. Not over 10 per cent. of the subscription shall be expended until \$50,000 have been collected.

FRANCE, a republic in western Europe, established on Sept. 4, 1870. The Constitution was adopted by the National Assembly on Feb. 25, 1875, and was revised on Dec. 9, 1884, and June 16, 1885. It vests the legislative power in the National Assembly, consisting of the Chamber of Deputies, elected by universal suffrage for four years, in the proportion of 1 member to every 70,000 inhabitants, and a Senate, composed of 300 members elected by electoral colleges in each department, made up of the Council General, the deputies for the department, and delegates of the communes. The life Senators, 75 in number, who were appointed before the revision of 1884, are replaced, as their seats fall vacant, by others elected in the regular way for the ordinary term of nine years. In 1890 their number had been reduced by death to 53. One third of the elective Senators are replaced every three years. The Deputies, of whom there are 584, are elected by *scrutin d'arrondissement*, each candidate being bound to announce his candidacy for a single district only within a fortnight of the election. From 1871 till 1876, and again from 1885 till 1889 the voting was by *scrutin de liste*, or a collective ticket for each department. Members of the active army can not sit in the Chamber or exercise the voting franchise. The majority of the state functionaries are ineligible, and by a special law members of the families that have reigned in France are precluded from sitting in either house. French citizenship and the age of twenty-five years for the Chamber and forty years for the Senate are the only other restrictions. The National Assembly meets regularly on the second Tuesday in January. The President is bound to call an extraordinary session when petitioned by a majority of the members of either house. He has power to do so on his own motion, and also to adjourn the session for a period not to exceed thirty days and not oftener than twice in the same year, and with the consent of the Senate he may dissolve the Chamber of Deputies, in which case he must appoint new elections within three months. The National Assembly meets in joint session for the election of a President of the republic or for the revision of the Constitution. The President is elected for seven years by the absolute majority of the National Assembly. The ministers are collectively and individually responsible to the Chambers, and every act of the President must be countersigned by one or more of the ministers. The President of the Republic is Marie François Sadi Carnot, elected Dec. 3, 1887. The ministry was composed at the beginning of 1891 of the following members: President of the Council and Minister of War, Charles de Freycinet; Minister of Foreign Affairs, M. Ribot; Minister of Finance, M. Rouvier; Minister of Justice and Public Worship, A. Fallières; Minister of Public Instruction and the Fine Arts, M. Bourgeois; Minister of the Interior, M. Constans; Minister of Public Works, M. Yves Guyot; Minister of Commerce, Jules Roche; Minister of Agriculture,

M. Develle; Minister of Marine, Vice-Admiral Barbey. This ministry was constituted on March 17, 1890.

Area and Population.—The area of France is 528,876 square kilometres, according to the cadastral survey, while the calculations of the Ministry of War make it 536,408 square kilometres. The legal population, including those temporarily absent, on May 31, 1886, when the last census was taken, was 38,218,903. The resident population was 37,103,689. The citizens of French birth numbered 36,700,342; naturalized citizens, 103,886; foreigners, 1,126,531. The number of marriages in 1889 was 272,934; of births, 880,579; of deaths, 794,933; excess of births, 85,646. The number of emigrants in 1888 was 23,339, most of whom went to the United States and to the Argentine Republic. The following cities contained more than 100,000 inhabitants in 1886: Paris, 2,344,550; Lyons, 401,930; Marseilles, 376,143; Bordeaux, 240,582; Lille, 188,272; Toulouse, 147,617; Nantes, 127,482; St. Etienne, 117,875; Havre, 112,074; Rouen, 107,163; Roubaix, 100,299.

The preliminary results of a census taken in April, 1891, make the population of France 38,095,000, a gain of 208,000 since 1886, when an increase of 565,000 since 1881 was shown. The growth of the city of Paris and its suburbs during the past five years was 249,000, and other large towns showed a similar increase, implying a considerable diminution in the rural population. In 28 departments an increase of population was noted, and in 59 there was an absolute decrease. The largest increase was 249,353 in the department of the Seine. In the Nord it was 77,276; Alpes-Maritimes, 43,627; Bouches-du-Rhône, 30,072; Rhône, 27,160; Hérault, 25,709; Pas-de-Calais, 29,981; Gironde, 21,508. The death-rate in France is low, and is constantly being reduced. Nevertheless the population is nearly stationary, for the reason that the number of births diminishes from year to year. In 1884 there were 937,750 children born; in 1885, 924,553; in 1886, 912,838; in 1887, 889,333; in 1888, 882,637.

Commerce.—The value of the general commerce of France, which embraces all merchandise entering and leaving the country, including foreign goods re-exported, was 5,320,000,000 francs for imports and 4,803,000,000 francs for exports in 1889. The special imports, confined to goods entered for domestic consumption, amounted to 4,317,000,000 francs; and the special exports, consisting of domestic products only, to 3,704,000,000 francs. The special imports of food products were 1,441,000,000 francs, and the special exports 837,000,000 francs; of raw materials 2,262,000,000 francs worth were imported, while the exports amounted to 941,000,000 francs; and in the category of manufactured goods the imports were valued at 613,000,000 francs, and the exports at 1,926,000,000 francs. The values of the chief imports for domestic consumption were as follow: Wine, 384,000,000 francs; raw wool, 371,000,000 francs; cereals, 366,000,000 francs; raw silk, 292,000,000 francs; coal, 212,000,000 francs; raw cotton, 203,000,000 francs; hides, skins, and fur skins, 180,000,000 francs; timber, 173,000,000 francs; oil seeds, 155,000,000 francs; coffee, 145,000,000 francs; chemicals, 86,000,000 francs; animals, 86,000,000 francs;

woolen manufactures, 68,000,000 francs; sugar, 65,000,000 francs; fruits, 64,000,000 francs, manufactures of silk, 58,000,000 francs; flax, 57,000,000 francs; meat, 49,000,000 francs; machinery, 44,000,000 francs; cotton manufactures, 41,000,000 francs. The following are the values given for the principal exports of articles of French produce and manufacture in 1889: Woolen manufactures, 364,000,000 francs; silk manufactures, 261,000,000 francs; wines, 251,000,000 francs; skins, 175,000,000 francs; raw wool, 169,000,000 francs; fancy or Paris goods, 145,000,000 francs; raw silk and yarn, 139,000,000 francs; leather goods, 135,000,000 francs; sugar, 121,000,000 francs; cotton goods, 116,000,000 francs; butter and cheese, 112,000,000 francs; leather, 108,000,000 francs; millinery, etc., 103,000,000 francs; linen goods, 103,000,000 francs; metal goods, 85,000,000 francs; liquors, 67,000,000 francs; jewelry, 57,000,000 francs; woolen yarn, 55,000,000 francs; chemical products, 49,000,000 francs; machinery, 42,000,000 francs; rags, 37,000,000 francs; novelties, 36,000,000 francs.

The distribution of the special commerce of 1889 among the principal countries of derivation and destination is shown in the following table, giving the value in francs of the imports from and the exports to each country:

COUNTRIES.	Imports.	Exports.
Great Britain.....	588,000,000	996,000,000
Belgium.....	475,000,000	571,000,000
Spain.....	355,000,000	194,000,000
United States.....	307,000,000	273,000,000
Germany.....	383,000,000	842,000,000
Italy.....	134,000,000	144,000,000
Argentine Republic.....	219,000,000	170,000,000
Algeria.....	201,000,000	179,000,000
British India.....	186,000,000	.....
Switzerland.....	.....	280,000,000
Russia.....	210,000,000	.....

The imports by land amounted to 1,650,000,000 francs, and those brought by sea to 3,670,000,000 francs; of which 1,606,000,000 francs were borne in French and 2,064,000,000 francs in foreign ships. Of the exports, 1,557,000,000 francs were sent by land carriages, and 3,246,000,000 francs by sea; 1,780,000,000 francs being carried in French and 1,466,000,000 francs in foreign ships. The share of each of the principal ports of entry in the general commerce, comprising both imports and exports, was in 1889 as follows: Marseilles, 1,827,000,000 francs; Havre, 1,746,000,000 francs; Bordeaux, 879,000,000 francs; Paris, 678,000,000 francs; Dunkerque, 506,000,000 francs; Boulogne, 453,000,000 francs; Cette, 235,000,000 francs; Rouen, 218,000,000 francs; Dieppe, 205,000,000 francs; Tourcoing, 201,000,000 francs; Calais, 160,000,000 francs; Belfort, 162,000,000 francs. The transit trade in 1889 amounted to 653,000,000 francs. The imports of precious metals were 448,000,000 francs, and the exports 233,000,000 francs. The analysis of the special commerce of 1889 in regard to the nature and origin of its constituents shows that of the imports 47·9 per cent. were products of agriculture, 32·6 per cent. of animal origin, 5·8 per cent. forest products, 7·1 per cent. the produce of mines, and 6·6 per cent. manufactured articles; while of the exports, 16·7 per cent. of the total value represented agriculture, 26·5 per cent. in-

dustries connected with the raising of animals, and 56.8 per cent. manufacturing industries.

Agriculture.—Out of 37,930,759 persons, the total population of France in 1886, 7,698,402 were dependent on agriculture, 8,324,196 on industry, 4,242,764 on commerce, 2,295,966 on invested savings, 1,020,721 on transportation, 965,010 on mining, 960,078 were of no known occupation, 711,027 were supported by public office, 613,362 constituted the public forces, 348,527 depended on teaching, 224,657 on religious worship, 207,401 on the law, 161,632 on the medical profession, and 152,016 obtained their livelihood from literature, science, and the arts. The farming class thus constitutes nearly half of the population. In 1889 the crops were generally abundant. There were 7,088,968 hectares sown to wheat, producing 108,319,771 hectolitres of grain (the hectare is 2.47 acres, and the hectolitre, dry measure, is equal to 2.84 bushels). The barley crop was 15,805,530 hectolitres, on 873,499 hectares; rye, 23,126,806 hectolitres, on 1,599,496 hectares; oats, 85,259,511 hectolitres, on 3,758,549 hectares; buckwheat, 9,334,800 hectolitres, on 590,811 hectares; Indian corn and millet, 9,683,594 hectolitres, on 603,292 hectares. Of potatoes, 106,998,419 metric quintals were grown on 1,454,794 hectares. The area given up to the sugar beet was 226,341 hectares, yielding 71,445,260 quintals, and 80,374,285 quintals of other roots were raised on 316,838 hectares. The colza crop covered 61,091 hectares; flax, 34,258 hectares; hemp, 53,825 hectares. The area sown to clover was 1,429,952 hectares, and 4,822,261 hectares were laid down in meadow or permanent pasture. The tobacco crop amounted to 205,929 quintals, raised on 16,264 hectares. Vineyards occupied 1,836,800 hectares, and wine crop amounted to 24,328,000 hectolitres (1 hectolitre = 22 gallons). The production of cider in France is large, though fluctuating, amounting in 1889 to 11,095,000 hectolitres. In 1890 the area under vineyards showed the contraction that has been going on for years, being 1,827,730 hectares, yet the success of the vine growers in arresting the spread of the phylloxera pest was evidenced by a larger vintage than in the preceding year, amounting to 27,416,000 hectolitres. The wine product does not suffice for the needs of the country, which imported 10,242,549 hectolitres in 1889. The foreign wines are improved and mixed with French vintages by the wine-makers, and the French exports of wine, though small in quantity, being 2,130,197 hectolitres, offset in value a great part of the excess of imports. Of the wine imported for blending and other purposes, two thirds is brought from Spain, and most of the rest from Algeria, whose product takes the place of the Italian imports, which have almost ceased since the expiration of the commercial treaty. The quality of the Algerian wine is inferior, being earthy and strongly alcoholic. The value of nuts, olives, and prunes gathered in 1889 was estimated at 109,516,741 francs. The exports of olive oil from Nice formerly contained twice as much of the fruitier Neapolitan oil as of the finer oil for which the district is celebrated. The trade of mixing oils for the foreign markets is threatened with extinction, owing to the raising of the duty on Italian oils from 3 to

15 francs per quintal, and already cotton-seed oil, disguised by a chemical process, is being introduced into the manufacture. The number of horses in France in 1889 was 2,881,153; of cattle, 13,508,252; of sheep, 21,996,731; of hogs, 6,037,743; of goats, 1,505,470. Sheep have decreased 34 per cent. and hogs have increased 13 per cent. in ten years. Silk culture is carried on in the departments of Drôme, Gard, Ardèche, Vaucluse, and less extensively in nineteen other departments. In 1889 the production was 7,409,830 kilogrammes of cocoons. There were exported 951,830 kilogrammes, of the value of 9,756,258 francs, besides 71,428 kilogrammes of silkworm eggs, valued at 5,714,240 francs.

The wheat crop of 1890 was 321,518,670 bushels. The cold and rain during the winter of 1890-'91 destroyed a large part of the growing crop, and consequently the area under wheat was reduced to 5,819,507 hectares, or 14,548,767 acres, which was 3,105,580 acres less than in 1890, and the yield was estimated to have fallen to 81,889,070 hectolitres, equal to 225,194,000 bushels, nearly a third less than the previous crop. The rye crop also was estimated at 8,299,582 bushels less than in 1890, when it amounted to 66,468,453 bushels. To supply domestic needs it was computed that France would have to import from abroad over 40,000,000 hectolitres of wheat at a cost of nearly 1,000,000,000 francs.

Navigation.—The total number of vessels entered at the ports of France in 1889 was 97,653, of 19,547,133 tons, of which 76,844, of 10,822,585 tons, were French, and 20,809, of 8,664,548 tons, were foreign. Of the French vessels, 67,891, of 6,122,837 tons, were engaged in the coasting trade, and 8,953, of 4,759,748 tons, in the trade with foreign countries or the colonies or in the maritime fisheries. Of the coasting vessels, 54,716, of 5,266,949 tons, arrived with cargoes, and 13,175, of 855,888 tons, in ballast. Of the French vessels engaged in ocean commerce, 8,457, of 4,645,355 tons, and of the foreign vessels 18,455, of 8,190,494 tons, arrived with cargoes, while 496 French vessels, of 114,393 tons, and 2,354 foreign vessels, of 474,054 tons, arrived in ballast. The total number of vessels cleared at all the ports was 98,805, of 20,075,836 tons. Of 9,613 vessels of French nationality engaged in the foreign trade, of 5,126,445 tons, 7,883, of 4,530,636 tons, sailed with cargoes and 1,730, of 595,809 tons, in ballast, and of 21,301 foreign vessels, of 8,826,554 tons, 13,824, of 4,866,603 tons, sailed with cargoes and 7,477, of 2,959,951 tons, in ballast.

The French merchant navy on Jan. 1, 1890, comprised 14,128 sailing vessels, of 440,061 tons, having 69,651 men in their crews, and 1,066 steamers, of 492,684 tons, with crews numbering 13,447 men. Of the sailing vessels, 292, of 34,963 tons, were engaged in the European trade, and 392, of 151,051 tons, in ocean commerce, all the others being employed in the coasting trade or in the fisheries. The number of steamers navigating between France and other European countries was 246, of 166,572 tons, and the number in the transoceanic service was 178, of 293,320 tons. Of the total number, steam and sail, as given above, 12,791 were under 50 tons.

Railroads.—The French railroad system in March, 1890, had a total length of 33,189 kilo-

metres, besides 2,944 kilometres for local traffic. The Government owned 2,628 kilometres. Many of the railroads enjoy a state guarantee. The gross receipts of the French railroads in 1889 were 1,132,100,000 francs, as compared with 1,059,900,000 francs in 1888. The net revenue in 1888 was 509,600,000 francs, the number of passengers carried was 224,801,159, and the freight transported was 82,355,288 tons.

Posts and Telegraphs.—In 1888 the internal postal traffic comprised 566,300,000 ordinary letters, 17,300,000 registered letters, 38,000,000 postal cards, 354,000,000 journals, 25,300,000 samples, and 370,400,000 circulars and manuscripts. In the international service 116,500,000 letters, 3,000,000 registered letters, 3,500,000 post cards, 67,800,000 newspapers and periodicals, 6,900,000 samples, and 24,200,000 circulars and manuscripts were forwarded. The domestic money orders numbered 22,200,000, of the aggregate amount of 655,500,000 francs, and the foreign money orders 1,400,000, of the value of 75,900,000 francs, besides postal orders representing 8,800,000 francs.

The length of the state telegraphs in 1889 was 88,047 kilometres, having 276,527 kilometres of wire, in addition to which there were 237 kilometres of pneumatic tubes in Paris, by which 3,476,000 cards and letters were transmitted in 1888. The number of telegraphic dispatches was 26,703,597, including the pneumatic service.

The Army.—Every Frenchman fit for military service may be called upon to serve the republic in the active army or the reserves. The period of military service begins at the age of twenty. The men drawn for the active army owe three years of service with the colors, but, in order to train the largest possible number of soldiers, a part of the active army—the number being fixed annually by the Ministry of War—is replaced by new recruits at the end of one year of service if the men can read and write, or if they are illiterate at the end of the second year. Those thus furloughed are chosen by lot. Since 1887 no exemptions have been allowed, even to students in theological seminaries. After receiving their military training, the soldiers pass into the reserve of the active army, and can be recalled to take their place in the ranks for exercises or peace manoeuvres or for any military duty up to the age of thirty. From then till they are forty-five years of age they form part of the territorial army, which is organized by military districts and divisions, and during the first six years are summoned to the drill camp for two weeks every year, after which they are inscribed in the territorial army reserve. All who are incapacitated by physical defects for military service must pay a fixed military tax of 6 francs a year and a variable surtax. In the active army recruits from all parts of France are mingled without reference to their places of residence. Each of the 18 regions into which France is divided is garrisoned by an army corps, and Algeria is occupied by the Nineteenth Corps. Each of the 18 army corps has 2 divisions of infantry, 1 brigade of cavalry, 1 brigade of artillery, 1 battalion of engineers, 1 squadron of wagon train, and 1 legion of from 2 to 4 companies of gendarmerie. The Nineteenth Corps has 3 infantry divisions. Every division of infantry is composed of 2 brigades, each

of 2 regiments. There are 6 divisions of cavalry not attached to the army corps, each consisting of 1 brigade of cuirassiers, 1 brigade of dragoons, 1 brigade of chasseurs or of hussars, and 2 or 3 batteries of horse artillery. The 144 regiments of the line attached to the 18 army corps, and quartered each in one of the subdivisions of the regions, are divided each into 3 battalions of 4 companies and a complementary *cadre* of 9 officers, every regiment consisting of 62 officers and 1,591 men. Besides these there are 18 extra regiments, having 51 officers and 1,560 men, each of which is destined to occupy the strong places in one of the regions. The other classes of infantry are 17 battalions of mountain chasseurs, each consisting of 27 officers and 809 men; 13 battalions of foot chasseurs, each with 19 officers and 552 men; 4 zouave regiments, with 73 officers and 2,551 men each; 4 regiments of Algerian *tirailleurs*, with 103 officers and 2,632 men in each regiment; 2 regiments in the foreign legion; 5 battalions of African light infantry; and the Tonquin regiment of *tirailleurs*. The infantry is armed with the Lebel rifle, with the caliber of 8 millimetres, carrying 8 cartridges in the magazine. The weapon is used as a single-loader for volley firing and for all ordinary purposes, and only by special command in emergencies, such as an enfilading fire of the enemy or a cavalry charge, is the magazine to be emptied.

The cavalry consists of 29 regiments of dragoons, 21 of chasseurs, 13 of cuirassiers, 12 of hussars, and 6 of Algerian chasseurs—in all 80 regular regiments, each consisting of 37 officers and 829 men, with 722 horses. There are besides 3 regiments of Algerian *spahis* and 1 regiment of *spahis* in Tunis. The law of July 25, 1887, ordered the formation of 4 new regiments of dragoons, 1 of chasseurs, 6 of hussars, and 2 of African chasseurs. Instead of the 6 regiments of hussars a seventh division of independent cavalry was ordered to be organized by the law of Feb. 19, 1890, consisting, like the others, of 2 regiments of cuirassiers, 2 of dragoons, and 2 of hussars.

There are 19 regiments of artillery attached to divisions, of 12 mounted batteries each, each battery having 4 officers, 153 men, and 132 horses, and 19 other regiments of corps artillery, each consisting of 9 mounted and 3 horse batteries, besides 24 batteries of mountain artillery, making in all 480 batteries, each having 6 pieces of 90 millimetres bore for the mountain, and 80 millimetres for the horse artillery. The fortress artillery comprises 16 battalions, each of 6 batteries and numbering 4 officers and 152 men, besides which there are 3 batteries in Algeria and in Tunis, making 100 batteries armed with guns of 95, 220, and 270 millimetres and mortars of 15 centimetres caliber.

The French army in 1891 had 2 marshals, 100 generals of division, 200 generals of brigade, 33 generals of *cadres* and reserves, 3,199 officers in the general staff, 574 in the military schools, 2,797 on special duty, 11,872 in the infantry of the line, 3,922 in the cavalry, 3,719 in the artillery, 439 in the engineers, and 412 in the train, making 26,934, or in the army corps alone 20,364, or including 651 officers of gendarmerie and 82 of the Garde Républicaine, 27,667 altogether.

The strength and distribution of the army was as follows, including officers and men :

DESCRIPTION OF TROOPS.	France.	Algeria.	Tunis.	Total.	Horses.
Infantry	298,222	38,312	7,378	388,907	7,115
Cavalry	68,088	8,401	2,073	78,557	70,729
Artillery	76,110	2,720	704	79,534	35,341
Engineers	11,014	583	244	11,841	1,353
Train	6,755	3,816	1,269	11,840	9,782
Administrative....	11,608	3,678	598	16,184	.....
Total army corps.	466,842	57,710	12,261	586,813	124,320
General staff	3,621	361	65	4,047	8,608
Military schools....	3,303	.....	.....	3,303	2,196
Unattached	2,359	830	110	3,319	598
Gendarmes	21,536	1,058	153	22,747	11,460
Garde Républicaine.	3,048	.....	.....	3,048	788
Grand total....	502,909	59,979	12,589	575,277	142,870

In the autumn of 1891 the largest force ever mobilized for peace operations, except perhaps in Russia in 1890, took part in the annual manœuvres, which took place in Champagne. Four army corps, the Fifth and Sixth, under Gen. de Gallifet, and the Seventh and Eighth, under Gen. Davoust, met as two hostile armies and went through a series of sham engagements, and then both armies were united and conducted against a skeleton enemy by Gen. Sausier. The reservists, who constituted two fifths of the total force of 120,000 men, bore the forced marches and the excessive heat even better than the active soldiers. The endurance, discipline, training, and intelligence displayed by the men, and proof of a highly organized staff service given by the efficient co-operation of all parts, convinced military critics of the complete restoration of the military prestige of France. The officers, a large proportion of whom have risen from the ranks, seemed to exercise great care to provide properly for the men and to command their respect and obedience; but the non-commissioned officers, few of whom are, like those of the German and other armies, old soldiers re-enlisted, failed to exercise the proper authority, though not through lack of intelligence. The chief characteristics of French tactics, as revealed by the manœuvres, are the use made of the mobility of the well-trained artillery and the keeping up, regardless of sacrifice, of a strong front in an infantry attack, which proceeds in a direct line to the prescribed objective, each regiment having a certain space to occupy. The Lebel rifle is sighted up to 2,200 yards. In advancing upon an enemy's position the line breaks into sections, then into squads, and, finally, into a chain of skirmishers, but the lying position is not allowed, even for firing, which only begins at about 750 yards. No use is made of the trenching tools on the offensive. Before the bayonet assault all the supports are brought up to form a strong front, and the magazines are not emptied till just before the final rush, the rifle being always used as a single-loader, except by command and in prescribed contingencies. In action not a single officer is with the firing line, whereas on the march the officers go at the head and the commanding general and staff in the very front. The infantry and artillery both use smokeless powder. The cavalry supports the other arms, always in strong force, wherever the nature of the ground permits and in all stages of an action.

The Navy.—The French navy in 1891 consisted of 432 vessels of all classes. The sea-going armor-clads were 14 barbette ships, 7 central-battery ships, 4 turret ships, 5 barbette cruisers, and 2 broadside frigates. The armor-clad vessels for coast defense comprised 8 barbette ships, 8 turret ships, 2 gun vessels, 3 barbette gunboats, and 2 floating batteries. There were 7 steel deck-protected cruisers, and among the unprotected vessels were 23 cruisers of the first and second classes, 14 of the third class, 36 screw and 16 paddle gunboats, 14 screw dispatch vessels of the first and 11 of the second class, 22 paddle dispatch boats, 16 dispatch transports, and 8 small gunboats. The torpedo flotilla numbered 4 torpedo cruisers, 8 dispatch vessels, 17 sea-going torpedo boats, 51 torpedo boats of the first, 60 of the second, and 7 of the third class, and 1 submarine boat. All are of steel, and have been built since 1885. Of the sea-going armor-clads 14, of the coast-defense armor-clads 7, all the deck-protected cruisers, and 75 of the unprotected vessels have been launched since 1880. The unfinished vessels in the beginning of 1891 were 5 sea-going armor-clads, 4 coast-defense armor-clads, 7 sea-going deck-protected vessels, 1 torpedo cruiser, 3 torpedo dispatch vessels, 14 torpedo boats, and 3 transports. The English navy alone excels the French in numbers and strength; no navy excels it in efficiency. In the naval manœuvres of 1891 a squadron was headed off by another more powerful but slower, and, being unable to get by to deliver an attack on the French coast of the Mediterranean, shaped its course for Ajaccio, where it was caught and stopped at the beginning of the bombardment. There were 60 vessels mobilized, and both the active sailors and the reserves proved their efficiency.

Finances.—The estimated revenue in 1891 was 3,247,408,825 francs, as compared with 3,085,614,460 in 1890, according to the revised budget estimates. The land tax was expected to produce 110,748,600 francs in 1891, as compared with 128,081,840, in 1890, and the building tax 88,344,000 francs, as compared with 68,526,000 francs. The personal-property tax, which is a graded capitation tax ranging from 1½ to 4½ francs, was estimated at 81,562,500 francs, against 80,187,500 francs in 1890; the door and window tax at 53,234,000, against 52,676,900 francs; trade licenses at 111,548,400, against 110,742,400 francs; carriage and other special taxes at 30,091,200, against 20,154,500 francs; and Algerian direct taxes at 9,114,300, against 8,779,700, francs, making the total from direct taxes 484,643,000 in 1891 and 478,098,840 francs in 1890. The total receipts from indirect taxes were estimated at 1,997,454,200 francs in 1891 and in the corrected estimates for 1890 at 1,874,789,300 francs, the receipts from registration fees being estimated at 505,322,500 francs in 1891, against 509,104,300 francs in 1890; stamp duties at 160,412,500, against 159,797,400 francs; custom receipts at 362,261,900, against 373,985,500 francs; excise and other duties at 728,012,500, against 582,594,500 francs; tax on movables at 49,164,500, against 50,424,000 francs; sugar duties at 178,000,000, against 178,700,000 francs; and indirect taxes in Algeria at 20,183,600, against 19,250,800 francs. The revenue from state mo-

nopolies was estimated at, 609,841,690 francs in 1891, against 600,330,862 francs in 1890; the revenue from domains and forests at 43,390,050, against 42,706,250 francs; and that from other sources at 22,790,160, against 27,414,194 francs. This makes the total ordinary revenue 3,158,119,100 francs in 1891 and 3,023,339,546 francs in 1890, to which is added to make the total budget 27,174,981 francs in 1891 and 766,945 in 1890 from exceptional sources, and 62,114,744 francs in 1891 and 61,507,969 in 1890 of receipts *d'ordre*.

The total ordinary expenditure was estimated at 3,247,169,967 francs in the budget for 1891, as compared with 3,236,742,885 in the rectified estimates for the preceding year. The expenses for the public debt in 1891 were set down as 1,300,569,885 francs, against 1,318,248,408 francs in 1890. For the President, the Senate, and the Chamber the expenditure in 1891 was 18,051,940 francs, against 13,044,048 francs in 1890. The expenses of the various administrations foot up 1,573,639,652 francs in the budget for 1891 and 1,548,567,173 francs in the revised estimates for 1890. Of this, 37,636,301 francs were assigned to the Ministry of Justice in 1891 and 37,468,450 francs in 1890; 45,067,003 francs were appropriated for Public Worship in 1891, against 45,085,503 francs in 1890; 15,228,800 francs for the Ministry of Foreign Affairs in 1891, against 14,168,500 francs; 63,257,212 francs for the expenses of the Ministry of the Interior in France and 7,291,635 francs in Algeria, against 62,473,310 and 7,282,635 francs respectively in 1890; 20,873,370 francs for the Ministry of Finance in 1891, against 19,593,870 francs; 1,928,200 francs for the Ministry of Posts and Telegraphs in 1891, against 1,906,000 francs; 578,470,845 francs for ordinary and 180,000,000 francs for extraordinary expenditures of the Ministry of War, against 556,333,550 and 154,073,006 francs respectively; 218,767,702 francs for the Ministry of Marine, against 190,903,686 francs; 55,748,920 francs for the colonies, against 55,483,255 francs; 173,734,840 francs for Public Instruction, against 170,692,878 francs; 12,083,905 francs for the Department of Fine Arts, against 12,063,905 francs; 20,555,483 francs for the Ministry of Commerce and Industry, against 20,539,483 francs; 21,080,330 francs for the Ministry of Agriculture, against 20,737,830 francs; 113,978,642 francs of ordinary and 57,936,473 francs of extraordinary expenditure for the Ministry of Public Works, against 113,168,384 francs of ordinary and 57,592,934 francs of extraordinary expenditure in 1890. The expenses of collecting taxes was estimated at 337,725,190 francs for 1891 and 334,216,756 francs for 1890, and repayments, etc., at 22,183,500 francs in 1891 and 22,666,500 francs in 1890. The extraordinary expenditures were 449,126,163 francs of special credits, etc., in 1891 and 446,087,668 francs in 1890, and the entries *d'ordre* in 1891 were 102,286,836 francs and in 1890 93,881,833 francs, making the grand total of expenditure 3,798,582,966 francs in 1890, against 3,776,712,386 francs in 1890.

The national debt has been calculated by M. Leroy Beaulieu to amount to 31,718,000,000 francs. M. Camille Pelletan in a report to the budget committee in November, 1890, made the total nominal capital 30,300,813,594 francs, on

which the average rate of interest is 3.48 per cent.; but this he capitalized at the actual sum of 22,824,043,690 francs, paying the average rate of 4.62 per cent. The expenses of the debt in 1891 were 447,519,532 francs on the 3-per-cent. *rente*, 305,540,303 francs on the 4½-per-cent. *rente*, 325,126,924 francs for annuities, and 222,382,926 francs for pensions and life interests. The capital of the *rentes* or consolidated debt is 21,241,621,710 francs, and the floating debt amounts to 908,724,600 francs bearing interest and 71,476,000 francs bearing no interest.

The Tariff.—The most important action of the French Chambers in 1891 was the framing of a new tariff system in accordance with the proposals submitted by the Government. A general tariff was adopted, in which the duties were made very high on nearly all imports. A special tariff offers much lower rates to nations according reciprocal privileges to French commerce and manufactures. The treaties with Belgium, Spain, Switzerland, Sweden and Norway, Portugal, and the Netherlands, running till Feb. 1, 1892, were denounced before Feb. 1, 1891, in order that the new tariff might be applied not only to those countries, but to those enjoying the same rights under the most-favored-nation clause, among others, Germany, England, Denmark, Russia, and Austria. In expectation of a larger revenue from the new protective duties, the railroad-traffic tax was repealed. The excise duties on sugar were modified. Raw materials are to be imported free, and to compensate the flax growers and breeders of silk-worms, bounties are given for these cultures. The existing conventional duty on cotton yarns was renewed for the treaty or minimum tax and increased by 30 per cent. for the non-treaty or maximum tax. The duty of 20 francs per 100 kilogrammes on pork proposed by the ministry was approved by the Chamber, but the Senate raised it to 25 francs. On petroleum the duty was fixed at 12 francs. Countries enjoying the former conventional tariffs under favored-nation treaties can be admitted to the new treaty tariffs at the discretion of the Government. This is not the case with the United States, and therefore negotiations for a special treaty of reciprocity, which must be ratified by the National Assembly, were opened by the French Government, which demanded merely the application of the reciprocity clause of the American Tariff act to produce of France and her colonies, by which skins, sugar, and molasses of the value of 12,000,000 francs per annum will be admitted into the United States free of duty, and American products of about the same export value will be admitted to the French market on the payment of the minimum duties.

Legislation.—An important change in the mode of punishing criminals was the law relating to first and repeated offenses, which was promulgated on March 27, 1891. On the conviction of a prisoner for a first criminal offense the judge is authorized to postpone the execution of the punishment, and after the lapse of five years it is entirely remitted, unless the person is convicted within that period of a second criminal act, in which case the first penalty will be carried into execution in addition to that attaching to the second offense. In the session that

ended on July 18, 1891, the question of regulating or suppressing betting on horse races occupied the attention of the Chamber repeatedly. The spread of the gambling habit, and the increasing number of thefts and defalcations traceable to horse racing, and of turf scandals, has attracted the attention of reformers for some time. An eminent judicial authority has said that the races, of which 315 took place in and around Paris in 1890, cause a great proportion of the crimes that are committed. In 1874 the pool sellers were driven out of Paris and restricted to the race tracks. The book-makers were driven out of their booths in accordance with an act passed in 1887, but continued to carry on their business. The *pari mutuel*, though forbidden under the general law against gambling, received a partial recognition by the licenses granted for the establishment of booths at race courses. M. Constans submitted a bill to legalize the pools and limit the business by taxing the proceeds 2 per cent., which was estimated to yield 4,000,000 francs for the benefit of the poor. The Chamber rejected his bill by 330 votes to 144 on Feb. 28. The Minister of the Interior thereupon carried out his threat to suppress pool selling and book-making. For the next two months a close police supervision prevented gambling on the tracks, and the result was that the owners lost large sums through lack of patronage. Meanwhile the question was brought up in various forms in the Chamber. M. Develle, the Minister of Agriculture, brought in a bill to place the race tracks under the control of his department, which was passed on May 13, as modified by the committee, and was slightly amended afterward by the Senate. Henceforth no race track can be opened without Government sanction; no races will be permitted except such as are organized solely for the encouragement of efforts to improve the breed of horses, and are conducted by societies whose statutes are approved by the Minister of Agriculture; bookmakers are allowed to take bets only from persons with whom they are acquainted and without money being passed at the time; and the *pari mutuel* can be carried on only by racing societies on their own grounds, and the profits shall be divided in a proportion to be determined by the Government, between charitable objects and race prizes. On May 27 the Chamber agreed to a bill empowering the Ministry of War, as a precaution against siege in time of war, to keep in every fortified town and intrenched camp a supply of wheat or flour sufficient to feed the population for two months, the towns of over 40,000 inhabitants bearing half the expense.

The Labor Question.—Incidents and questions connected with the social problem arrested public opinion and preoccupied the Legislature in an unusual degree in 1891. On Feb. 18 a Council of Labor, composed of masters and workmen appointed to deliberate and advise the Government on labor matters, was opened under the presidency of Jules Roche, Minister of Commerce. Its recommendation of a Labor Bureau, modeled on that of the United States Government, was approved by the Cabinet, and the necessary legislative action was initiated. The police and military authorities took extraordinary precautions to prevent an Anarchistic out-

break on May 1. In Paris cavalry patrolled the streets, and regiments of infantry were kept under arms. About 300 well-known Anarchists and Socialists were arrested the day before and held as dangerous characters. Cunningham Graham, a Socialist member of the British Parliament, attempted to lead a demonstration and was stopped by the police, who charged repeatedly at the crowd assembled in the Place de la Concorde. In Lyons the people resisted the police, who attempted to break up their labor procession, and assailed with stones the cavalry who dispersed them in the street, drove them out of the cemetery, whither they then repaired to hold a demonstration, and charged into them twice more on their return to the city, after they had overcome the police. In Marseilles a squadron of horse broke up the demonstration, and, as in Lyons, many persons were arrested, the chief one being Deputy Antide Boyer. Serious disorder occurred at Fourmies, where a strike was proclaimed, and half the miners left work. Many persons were arrested early in the day for intimidating men who refused to join in the strike. In a collision between the mob and the gendarmes the latter were forced to retreat. Toward evening about 1,200 men armed with sticks gathered in the square and loudly called for the release of their comrades. Although soldiers were drawn up to support the gendarmes, they charged the latter and almost succeeded in capturing the police station. The troops then charged with fixed bayonets, and drove the people out of the square. But, returning with a supply of bricks and paving stones, they attacked the soldiers and overwhelmed a body of police. A whole regiment of infantry was brought up, and, finally, on the demand of the sub-prefect, the troops fired into the mob, which continued to fight hand-to-hand with the soldiers and police, but finally ran away. There were 14 persons killed, some of them women, and 40 were wounded. This affair and the condemnation of labor leaders for inciting riot at Lyons, Bordeaux, Charleville, and other places led to fresh strikes and disturbances. Although the Chamber by an overwhelming majority refused to order an investigation of the Fourmies disaster, on the ground that it would be insulting to the army, and the Minister of the Interior took energetic measures to repress the agitation that grew out of the incident, arresting speakers and expelling Cunningham Graham, the Government changed its attitude on the labor question. Shortly afterward occurred a strike of the omnibus drivers of Paris, who were worked from fourteen to seventeen hours a day, and demanded a uniform working day of twelve hours at the same wages. They first formed a syndicate or union, and appointed a committee to present their grievances to the managers of the omnibus company, which has a monopoly of the service for the whole city. Although the law provides that either employers or employés may form unions and delegate a committee to act for the body, the managers of the company refused to recognize the syndicate or treat with its delegates. Despite the general inconvenience caused by the strike that ensued, the public sympathized with the men. The places of the striking drivers and conductors

were easily filled, but the people unharnessed the horses as soon as an omnibus started out, and drove away the police when they attempted to interfere. At the end of two days the Minister of the Interior threatened to municipalize the omnibus service, a proposition that had often been advocated in Radical circles, if the directors did not at once make terms with the men and furnish to the public the service required by their charter. They were thus compelled to grant the maximum work-day demanded, at the same rate of pay, abolish fines, and recognize the union officially. The success of this "revolutionary strike," as it was called, destroyed the ascendancy of the Possibilists, who had the adhesion of the main body of French working men from the split of the Labor party into Possibilists and Marxists, till the time when the Marxists and a part of the Possibilists accepted Boulanger as their political deliverer, expecting that the general who had encouraged his soldiers to share their rations with the strikers at Decazeville would accomplish more for them at one stroke than the Possibilist policy of constitutional action had in eight years. The Possibilists had become a power in the municipal councils, and had organized labor exchanges supported by public funds, had the expenses of labor delegates to international exhibitions paid out of the public revenue, obtained subsidies for schools established by Socialist societies, and even secured aid for the families of workmen on strike. The success of the omnibus strike, which outweighed all they had done, brought to the front the revolutionary Marxists and the Independents, who eschew politics, and new revolutionary strikes were thought of. The railroad companies were more unpopular than the omnibus and street railroad companies, which were compelled all over the country by strikes to grant the concessions won in Paris. The railroad employés were underpaid, and one reason was that a part of their wages was detained in order to give them a pension at the end of twenty-five years of service; and yet they could be discharged at any time without cause, forfeiting what they had contributed to the fund. To remedy this and other abuses, a strike was begun. The public did not respond, as was expected, to this new demand on their sympathies, and the Government could not afford to allow the railway service to be paralyzed, because it is a part of the military system. The army railroad corps was made to take the places of the striking engineers and trainmen, and even to repair the damaged rolling stock, and the Government threatened to call the strikers back, as reserve men of the army, to work without pay. The popular feeling against the railroads is strong, especially on account of the failings of the third-class passenger service, and a tendency toward the resumption of the Government control of railroads was manifested in two bills presented to the Chamber, one of which proposed that directors of lines enjoying a State guarantee should be appointed by the Government, and the other that no foreigner should hold office in the boards of such railroads. A strike for short hours by barbers, grocers' clerks, druggists' assistants, and other employés in the shops of Paris, who thought that from eight in

the morning till eight at night was a fair day's work, proved likewise a failure. A strike against the *bureaux des placement*, or private intelligence offices, seemed to promise better results, for the abuses connected with these agencies, the excessive charges, the practice of sending applicants to places that they can not fill, in order to get a double fee, have been familiar for generations. Since the time of the empire they have been under police supervision, but this control has never been effectually exerted. The municipal officials have been intrusted with the work of directing workmen to places, but have shirked the task. Labor exchanges have been established, and have proved a failure because they must send the persons whose names head the list, without regard to character or capability, and therefore nine tenths of the business remains in the hands of the private agencies. The strike was begun by the bakers, and was to be taken up by hair-dressers, woman cashiers, seamstresses, domestic servants, and all who were dependent on the *bureaux des placement* for finding them employment, who proposed to organize trade unions to get them places gratis. M. Constans told them that if they did not like the services of the private offices they could withhold their patronage. When the people of Paris began to be deprived of their daily wheaten bread the Government set the army bakers to work to furnish the masters with bread that they could serve to their customers at a better profit than they had made with their own, and thus the strike was crushed by the interposition of the authorities.

The Chambers had under discussion from the beginning of the year a bill to regulate the labor of women and children in factories, in accordance with the recommendations of the Berlin Labor Conference. The proposal of M. de Mun and Bishop Freppel to designate Sunday as the weekly day of rest was rejected by the vote of the entire Republican party. The maximum work day was fixed at ten hours for children and eleven hours for women. In February the Chamber voted in favor of subsidizing working men's provident and old-age benefit societies. An act to distribute and fix responsibility in case of accidents was rendered of little value by amendments. After the Fourmies disaster and the omnibus strike all kinds of socialistic legislation was introduced by private members. M. Lafargue, who was sent to the penitentiary for a year as ringleader of the Fourmies riot, was elected a Deputy, but was pronounced disqualified by the Chamber in November on the ground that he was a foreigner. A law was proposed giving a part of the profits to workmen employed in state industrial establishments, and a project was discussed for fixing not only a uniform length for a day's work, but also a minimum rate of wages. The Chamber almost unanimously agreed to a bill extending the twelve-hour work day of the law of 1848, which was limited to state and municipal establishments, to railroad engineers, firemen, and signal men, and to drivers of omnibuses and all employés of transportation and navigation companies possessing franchises granted by the state or by municipalities. A bill passed by the Chamber, which was rejected by the Senate, would compel every

employer to give an account of his reasons for discharging a man. M. Constans and M. Rouvier worked out a vast project for creating for workmen a fund for retirement and insurance on the lines of the German scheme, but without its compulsory character and the feature of state management. The fund, which is to reach in a certain time the capital sum of 12,000,000,000 francs, is to be built up by a small tax on the salary of the insured, an equal contribution from the employer, and a subsidy of the same amount from the state, which will have to grant an annual sum estimated at 150,000,000 francs. A workman can be insured or not, as he pleases, and has some choice whether the fund will be entrusted to a Government establishment or a private company. The scheme offers the advantage of promising a moderate pension without waiting for extreme age and of leaving a certain provision to the families of participants. M. Constans said that the Government, which had provided *milliards* to make the army strong and France respected, would be able to do its share, and that he and his colleagues would willingly cede their places to younger strengths if they could achieve this work of peace and another for the organization of agricultural credit, for it is inequitable that, whereas a banker can borrow for 3 per cent., the cultivator, who nets only 2½ per cent. from his land, must pay 5 per cent.

International Congress of Miners.—A Congress of Miners met in Paris in April, chiefly for the purpose of deciding on a method for securing the eight-hour working day. There were 99 delegates, representing 909,167 miners in Great Britain, Germany, France, Belgium, and Bohemia. The meetings were held in the completed part of the Paris Labor Exchange, which is to cost 4,000,000 francs. The delegates pledged their constituents to give pecuniary support to the coal-miners' strike in Belgium. The existing international committee was re-elected, and authorized to draw up statutes for an international federation of miners to be submitted to the next Congress. There was much discussion between the advocates of state intervention and a legal work day and the English trade unionists and Belgian proponents of a general international strike on May 1, 1891. The German spokesman suggested a general strike at a later date, allowing more time for preparation. The English miners, though they have had the eight-hour day for twenty years, promised to strike with their Continental brethren in order that English coal might not be used to replace exhausted stocks in other countries. The compromise resolution adopted on April 4, when the congress separated, runs as follow:

The International Congress of Miners, now sitting at the Bourse du Travail, deems that a general and international strike may become necessary to obtain an eight-hour day. The congress, however, before resorting to such an extreme measure, invites the governments and parliaments of the nationalities represented at this congress to agree to an international convention dealing with an eight-hour day in mines, whether belonging to the state or to private enterprise, this international convention to be similar to those which the various governments have applied for the regulation of the postal, telegraphic, railway, and navigation services.

The Melinite Scandal.—On May 19, Gerville Réache, Deputy for Guadeloupe, charged the Ministry of Marine with delivering melinite, or smokeless powder, to the Armstrong firm in England. A few days later M. Turpin, one of the inventors of picric acid, which is the basis of melinite, and M. Triponé, a captain in the territorial army, were arrested on the charge of espionage or treason for having sold to the Armstrongs the secret of the French explosive. In 1884 M. Turpin offered the Government a substance which he called picric acid, and experiments were begun in the state laboratories to compound an explosive, a part of which he witnessed. For the knowledge that he imparted he was paid 251,000 francs, and was warned not to divulge what he had seen, though he was at liberty to do what he liked with his own discoveries. He demanded a higher price for his invention, and, after the Government had perfected the process of making melinite, he made constant demands for compensation, which were refused. He engaged in the manufacture of his picric acid, endeavored to sell it to foreign governments as identical in composition with the melinite of the French arsenals, and in 1888 entered into a contract with the Armstrongs to teach the process of making smokeless powder. Capt. Triponé, accepting an agency from the Armstrongs, negotiated the contract and obtained samples of the real melinite and documents relating to the manufacture of the shells from M. Fasseler, an officer, and M. Feuvrier, an engineer, in the Government arsenal. M. Turpin, who had expressed penitence to M. de Freycinet for his experiments in England, after promising not to continue his unpatriotic conduct, was afterward detected in overtures to the Italian and German governments. He declared that he had refused 750,000 francs for the completion of his experiments from the Armstrongs, and in September, 1889, brought accusation against Capt. Triponé, which he repeated in 1890, but did not sustain with the evidence that he pretended to possess, so that that officer was exonerated by a military commission in the beginning of 1891. After M. Réache's disclosures, which were officially contradicted, M. Turpin published a book inculcating the others and describing the chemistry of his preparation. For this he was arrested, with the persons whom he accused, under the law against spies, on the charge of revealing state military secrets. Although the secrets of the smokeless powder and repeating rifles of different governments are pretty well known to all the rest, the affair created a tremendous sensation in France. M. de Freycinet denied that the explosives described by Turpin were anything resembling those adopted for the army, or that artillery secrets of importance had been revealed, and his explanations were accepted with a vote of confidence by 338 against 137. Mistrust of the devoted and energetic Minister of War helped to make the attack on the Cabinet near the close of the session well-nigh successful, and was the motive of the rejection, on the eve of adjournment, of a credit of 600,000 francs for enlarging the Polytechnic School. M. de Freycinet was only restrained by the persuasions of his colleagues from offering his resignation, instead of prorogu-

ing Parliament, on July 18. The accused persons were tried by the Correctional Tribunal, and the principals received the extreme penalty of the law. M. Turpin was condemned to five years' imprisonment, a fine of 2,000 francs, and five years' suspension of civic rights; M. Tripóné, to five years' imprisonment, a fine of 3,000 francs, five years' interdiction of civic rights, and ten years of exile; M. Fasseler, to five years' imprisonment, a fine of 3,000 francs, and five years' interdiction of civic rights; and M. Feuvrier, to two years' imprisonment, a fine, and interdiction of civic rights for two years. The Minister of War proposed extending the period of imprisonment for espionage to ten years, and the army committee of the Chamber recommended the death penalty for some cases and hard labor for life or for limited periods for others.

Monarchists and Clericals.—In January the Parisian mob drove the ministry to suppress Sardou's new drama of "Thermidor," because it reflected on the actors in the revolution of 1792. The downfall of Boulangism prostrated the several movements for the restoration of monarchy, and the anti-Republican parties were only kept alive because their politicians could not obtain admission into the Republican party, and because the Ultramontanes still upheld royalism as their hope of deliverance from the persecutions that they thought the Church was subjected to by the republic. The adherents of Prince Victor Napoleon formally accepted the republic. Cardinal Lavigerie early in 1891 proposed the abandonment of royalty and the formation of a Christian and Conservative party within the republic. A union of Christian France was organized, which did not openly adopt the republic, but remained silent regarding forms of government. Pope Leo had declared that the Holy See has no pretensions to interfere with political systems, and the Cardinal Archbishop of Paris, in March, published a letter in which he said that Catholics could differ legitimately regarding political institutions so long as religion and morality were respected. Sharp controversies between Clericals and Republicans arose in the latter part of the year, especially in reference to the demonstration of the French pilgrims in Rome. A violent scene occurred in the Senate when the President, M. Floquet, repeated the old story that Pius IX was once a Free Mason. Minister Fallières, in a circular, warned the authorities of the Church against encouraging pilgrimages that were likely to degenerate into political demonstrations. Monseigneur Gouthe-Soulard wrote a reply in which he called the letter of the Minister of Justice and Worship an "odious misconception," and said: "Peace is sometimes on your lips; hatred and persecution are always discernible in your acts." For insulting the minister he was prosecuted in November, and condemned by the Court of Appeal to pay a fine of 3,000 francs. The question of repealing the concordat was more seriously discussed than before. By the concordat concluded by Bonaparte as First Consul in 1801 the Catholic Church in France, which numbers 36,743 prelates and priests, receives a grant from the state amounting to 44,000,000 francs a year, has the use of the episcopal palaces, churches, and other ecclesiastical buildings belonging to

the state, and costs the Government and the communes about 296,000,000 francs a year, while its independent income is 565,000,000 francs. Few of the clergy, who are not now required to take the oath of allegiance to the republic contained in the original concordat, would be willing to sacrifice the subventions of the Government in order to obtain immunity from the obnoxious police regulations. The ministers declared in the Chambers that they would insist on the full submission of the recalcitrant clergy to the terms of the concordat, when the monarchists and Clericals began a vigorous parliamentary attack on the ministerial decrees.

Foreign Relations.—When the Empress-dowager Friedrich visited Paris early in 1891 to look after a legacy, she privately made overtures to French artists to induce them to take part in an international art exhibition at Berlin. Some accepted, others publicly announced their refusal on patriotic grounds, and then the former withdrew their acceptance. As she traveled incognito, the President refrained from calling, and when she visited St. Cloud and Versailles the League of Patriots began demonstrations that caused her to leave for England. These incidents gave umbrage to the German Emperor, who retorted by rescinding certain relaxations of the passport system in Alsace and Lorraine, and causing the laws to be enforced in all their rigor. Taking as a pretext the stoppage of communication with Switzerland by the Moenchenstein disaster, the German Government retrieved this mistake by granting liberty to through passengers to travel on the railroads of Alsace-Lorraine without passports, and on July 8 made the order permanent. The renewal of the Triple Alliance (see GERMANY) stimulated the revenge agitation in France. On July 16 M. Laur, Boulangist Deputy, put a baseless question regarding passports to the ministry, and when M. Ribot moved the indefinite postponement of the interpellation he was defeated by a coalition of Royalists, Boulangists, and Radicals, who gave 286 votes to 203. On the day following M. de Freycinet, making it a question of confidence, was sustained by a majority of 319 to 103. The visit of the French fleet to Cronstadt on July 23 and the reception of the French officers by the Emperor Alexander was regarded through Europe as a sign that an informal understanding, if not a formal defensive alliance, had been arrived at between Russia and France. That no combined action against England could be contemplated was evidenced by the acceptance of Queen Victoria's invitation for the squadron of Admiral Gervais to visit Portsmouth immediately on returning from the Russian visit. The reception of the French fleet scarcely dispelled the impression that Lord Salisbury had promised to give naval support to the allied central powers by guarding the coast of Italy in certain contingencies, which had been strengthened by the visit of the Kaiser to England. Admiral Gervais was said to have taken to Russia documents relating, among other things, to combined action in China, which was borne out by the refusal of both powers to take part in the proposed naval demonstration, leaving England to maintain in China an attitude of isolation that would permit her to safeguard

her interests by independent action, giving rise to rumors of an Anglo-Chinese alliance against Russia and France in Asia. As a result of the fraternal drawing together of the French and the Russians, the Russian loan that Baron Rothschild had refused to negotiate was easily raised on good terms in France by a popular subscription. A speech that the German Emperor made at a gathering of German officers, in which he referred to the first Napoleon as a "Corsican parvenu," was the signal for an outbreak of Chauvinism in France. The presentation of Wagner's "Lohengrin" by the musicians of the opera afforded occasion for an anti-German demonstration, which the Government checked by vigorous measures. Soon afterward the inconvenience of the passport regulations, which have done much to keep alive the French sympathies of the people of the lost provinces, was in a large measure removed by a decree of the German Government. This act abated private suffering and annoyance, and tended to remove a source of danger to the peace of Europe, which seemed to be confirmed by the new grouping of the powers. M. Ribot said: "It is not at a moment when we are in a position to cultivate peace with the greatest dignity that we shall expose ourselves to the danger of compromising it."

Algeria.—Each of the three departments into which Algeria is divided sends a Senator and two Deputies to the French National Assembly. These are Algiers, Oran, and Constantine, having collectively the area of 477,913 square miles, including the districts administered by the military authorities, and a population of 3,324,316, according to the enumeration of 1886, in the territory under the Governor-General and 492,996 in the military territory. The Governor-General is responsible directly to the President of the republic. The post has been filled by Louis Tirman since Nov. 26, 1881. He retired in 1891. The general commerce in 1889 consisted of 191,885,000 francs of imports from France and 68,050,000 francs from other countries, and 201,917,000 francs of exports to France and 98,158,000 francs to other countries. The special imposts amounted to 237,417,000 francs of imports and 229,789,000 francs of exports. Of the special imports, 178,863,000 francs came from France, 10,778,000 francs from Great Britain, 8,225,000 francs from Spain, 8,108,000 from Morocco, 7,018,000 francs from Tunis, under 2,000,000 francs from Russia, Austria, Turkey, and Italy, and from the United States 981,000 francs. Of the special exports, France received 200,500,000 francs, Great Britain 12,118,000 francs, and Spain the next largest amount, which was 3,715,000 francs, while the share of the United States was 1,219,000 francs. The chief exports to France are wine, sheep, cereals, and wool; and the exports to Great Britain consist mainly of esparto and other fibers for paper stock and iron ore. In 1889 there were 3,650 vessels, of 2,117,658 tons, entered from French and foreign ports, and 3,727, of 2,196,583 tons, cleared. The length of railroads open in 1890 was 1,910 miles, including 140 miles on Tunisian territory. The receipts in 1888 were 21,908,225 francs. The telegraphs in 1889 had a length of 7,000 miles, with 12,000 miles of wire, including extensions into Tunis.

The Trans-Sahara Railroad, starting from El Guerrah, in the northern part of the Algerian Atlas, 23 miles south of Constantine, has been carried across the mountains and up to the edge of the Tuareg country, proceeding in a south-westerly direction from oasis to oasis to Biscara, a total distance of 239 kilometres. The total length of the projected line across the desert to the shore of Lake Chad is 3,000 kilometres. Since the first section was opened in 1888 the inhabitants of the northern oases have been protected from Tuareg inroads, and trade has increased wonderfully. The next extension will be to Tuggart and across the Tisili plateau, where places for stations can be prepared by planting eucalyptus trees and sinking artesian wells. A further continuation southward can only be accomplished after the Tuaregs have been effectually beaten in war, and Ghadames and Ain Salah occupied. The oasis of Touat, which contains with the neighboring oases a population of 200,000, has been a place of refuge for enemies of France, and after the massacre of a number of Frenchmen, the natives, fearing reprisals, appealed for the protection of the Sultan of Morocco, offering to accept his sovereignty. The Sultan, against the protests of France, prepared formally to annex the district; but the French advanced to El Golea, and the Sultan, who had begun to collect tribute, was told, through the envoys that he sent to consummate the annexation in the autumn of 1891, that the Touatans had changed their minds and preferred a connection with Algeria.

The revenues of the Government are obtained from a direct tax imposed on the natives and from customs, licenses, etc. The cost of the army and a part of the expenses of the public works is borne by the French Government, which spends 21,000,000 francs a year on Algeria, exclusive of military expenditure. The budget for 1891 makes the revenue 43,943,833 francs and the expenditure 43,450,155 francs. The native Jews, who numbered 43,182 in 1886, were admitted to French citizenship in 1870. The policy of conferring the franchise on the Arabs was never seriously considered till 1891, when a project for the gradual naturalization of the Mussulman population was discussed in the Chamber. After encouraging the settlement of French colonists, who have made the soil productive and added greatly to the resources of Algeria, the Government can not afford to enfranchise the mass of the indigenous population rapidly. In 1888 there was 219,627 French people and 205,212 foreigners residing in the country. The Government spends 2,750,000 francs a year to extend French colonization, and has distributed 1,500,000 acres gratis since 1871. The policy of educating and conciliating the natives, and of taxing the consumption of alcoholic beverages and the growth and sale of tobacco, as in France, is recommended in M. Boulanger's report to the budget committee as a means of relieving the French budget. The net cost of Algeria since the conquest in 1830 has been at least 4,000,000,000 francs, and during the whole period the revenue collected has been no more than 1,250,000,000 francs, nor do the deficits decrease, for in 1891, counting guarantees to railroads, and military, civil, and other expenditure, the French tax pay-

ers had to contribute 86,000,000 francs. In 1891 locusts destroyed pastures in the Sahara and damaged crops in various parts of Algeria.

Tunis.—The principality of Tunis, although nominally a part of the Turkish Empire, has been a protectorate of France since 1881, and is governed by the French Ministry of Foreign Affairs through the minister resident. In 1884 a French judicial administration superseded the consular tribunals operating under the capitulations. The reigning Bey is Sidi Ali, born Oct. 5, 1817. The French representative is M. Massicault. The area is about 45,000 square miles, and the population is about 1,500,000 persons, including 49,000 Europeans, of whom 40,000 live in the city of Tunis, which has a Jewish population of 40,000 and 135,000 inhabitants altogether. The receipts from direct taxes in 1888 were 7,208,000 francs, and from indirect taxes 8,853,619 francs, while the total expenditures were 27,896,139 francs. The debt was consolidated in 1884 into a perpetual 4-per-cent. *rente* of 6,307,520 francs a year, and this was converted again in 1888 into a loan paying $3\frac{1}{2}$ per cent. of the nominal amount of 174,427,500 francs, to be extinguished in ninety-nine years. The imports in 1889 had a total value of 31,153,936 francs, and the exports were 18,104,903 francs in value. Of the imports, more than half came from France, which received directly a fifth of the exports, while something more than a third went to Algeria, about a fifth to Italy, and an eighth to Great Britain. The chief exportable products are wheat and barley, olive oil, alfa, tan, woolen manufactures, and sponges. There were entered at Tunisian ports during 1889 6,770 vessels, of 1,809,627 tons, and 6,503, of 1,807,697 tons, were cleared. Three fifths of the shipping was French, the Italian and the English coming next.

Indo-China.—The colonies of Cochin-China and Tonquin and the protectorates of Cambodia and Annam were united in a customs union in 1887, and the Superior Council of Indo-China fixes the budget for Cochin-China and advises as to the others. The imports in 1888 amounted to 68,069,305 francs, and the exports to 71,274,063 francs.

The area of Cochin-China is 13,692 square miles, and the population 1,916,429, of whom 2,537 are French. There are 51 miles of railroad and 1,840 miles of telegraph. The revenue in 1890 was estimated at 30,327,033 francs. The mother country contributed 3,548,793 francs in 1891. Rice is the principal product, constituting 70 per cent. of the exports, which were valued at 60,913,433 francs in 1888.

Cambodia, ruled by King Norodom, who accepted a French protectorate in 1863, has an area of 46,000 square miles, and from 1,500,000 to 1,800,000 inhabitants. The revenue in 1888 was 3,275,000 francs, and the expenditure 3,059,236 francs. Sugar, rice, betel, cotton, tobacco, indigo, and cardamom seeds are produced.

Annam became a French protectorate by the treaty of June 6, 1884. Bun Can was proclaimed King on Jan. 31, 1889. The area is 106,250 square miles, and the population about 5,000,000. The exports are cinnamon bark, seeds, tea, tobacco, cotton, and sugar.

Tonquin, a province of Annam that was formerly tributary to China, has 34,700 square

miles of territory, and from 9,000,000 to 12,000,000 inhabitants. The revenue of Tonquin and Annam in 1888 was 17,321,000 francs, and the expenditure 17,034,620 francs. In the French budget for 1891 an appropriation of 10,450,000 francs is made for the two countries. The imports in 1888 were 23,881,012 francs, and the exports were 6,988,249 francs, consisting of rice, sugar, cotton, tobacco, pepper, and oils. Rich mines of copper and iron are worked, and extensive deposits of good coal have recently been discovered. In 1890 there were 596 officers and 24,000 soldiers in Annam and Tonquin, and in Cochin-China 130 officers and 3,830 men. Fighting with the Chinese and Tonquinese pirates or rebels still continued in 1891, and in the early part of the year the roads were nowhere safe. The rebels carried on their depredations within sight of Hanoi and Sontay. A regular siege was conducted by a force of 1,200 French troops against a strongly built fort defended by 3,000 pirates, who were finally driven out after inflicting a loss of 300 killed and wounded. In February the French resident of a province was murdered. When M. Lanessan was appointed Governor-General of Indo-China on April 21, 1891, he was clothed with fuller powers than his predecessors. The commander of the land and naval forces was placed under his orders, and forbidden to undertake any operation, even of a defensive character, without his consent. The first section of the railroad from Phulang Thuong to Langson was opened in June. It passes through a region that had been abandoned by the inhabitants on account of pirates, but was becoming settled and prosperous again. In the course of the summer the Hang-Son pirates were driven out of the province of Cao Bang by flying columns, their stronghold being captured and their leader killed by Capt. Lassalle's detachment. Rear-Admiral Fournier pursued the pirates on the sea with energy, and stations were established in northern Tonquin for systematic and unremitting operations on land. The French administrators have been encouraged by the growth of the coasting traffic and the transit trade by the Red river route and by the development of new resources, and in France the opinion is taking root that Tonquin will prove in the end to be worth the sacrifices that it has cost.

Madagascar.—By the treaty signed at Tamatave on Dec. 12, 1885, the Malagasy Government acknowledged the protectorate of France, and agreed to submit to the regulation of its external relations by the French Government through a resident general, who is allowed to maintain a military guard. The French protectorate was admitted by England in the Anglo-French agreement of Aug. 5, 1890. The native Government of the Hovas, which remains independent in domestic affairs and has control over the other Malagasy tribes, has for its head Queen Ranavalona III, born in 1861, who married the Prime Minister Rainilaiarivony shortly after her accession in 1883. Madagascar has an estimated area of 228,500 square miles and over 3,500,000 inhabitants, of whom 1,000,000 belong to the dominant Hova race, which is of Malayan origin. There are about 1,000,000 Sakalavas, 600,000 Betsileos, 400,000 Betsimis Sakaras, 200,000 Bavas, 200,000 Antatiavas, great numbers of negro slaves, and

many Arab traders on the coast. Antananarivo, the capital, has a population of 100,000. The land around the Bay of Diego Suarez has been annexed to France for a colony, military post, and coaling station, and improvements have been begun that are expected to make the harbor one of the finest in the world. The Hova army of 20,000 men, armed mostly with breech-loading rifles, has been trained by English officers. The French have a garrison of 32 officers and 1,141 men at Diego Suarez, and 21 officers and 428 men on the neighboring island of Réunion. Madagascar is supposed to be very rich in minerals. The production of gold and of copper is increasing. Forests of great extent abound in valuable timber, which is being exported by European *concessionnaires*, who have obtained grants on the northeast coast, and who plant the cleared ground with tropical and subtropical products. The natives breed cattle and raise rice, sugar, yams, coffee, and cotton. They are skillful weavers of cotton and silk and of the fiber of the rofia palm, and their metal work is noted. The exports are cattle, hides and horns, rofia, India-rubber, coffee, sugar, vanilla, wax, copal, rice, and oil seeds. Commercial relations with the United States are of long standing, and in recent years the trade has increased. The imports in 1888 were valued at 4,050,779 francs, and the exports at 4,119,234 francs. The lack of means of communication prevents the commercial development of the resources of the interior and even of domestic production, for a large proportion of the people are employed as bearers in conveying goods between the seaports and the populous central districts.

The Hovas rule as conquerors over such of the tribes as they have reduced to subjection. The inhabitants of Belanona, which is three days' march from the capital, exasperated by the cruelty and extortion of Ramiasatra, the Governor, sent a delegation of 100 of their principal men to the Prime Minister to petition for his removal. The petitioners waited eight months for an audience, and when they were at last received the Prime Minister, who is practically the ruler of the country, warned them against making rash charges, and would promise to make an inquiry only in case they returned with their complaint after going home to reflect well on the matter. Before they reached their homes they were stopped by the Governor's Hova soldiers and were butchered, with their families and friends, 278 in all. Fugitives arrived at Antananarivo on Jan. 12, 1891, and the Prime Minister, urged by the foreign residents, had a judicial investigation made, and at its conclusion ordered the execution of Ramiasatra and his brother. In the beginning of March the Hova Governor of Tulear and 53 of his escort, while on the route to the capital of the Sakalava King of Tompomana, in the west of Madagascar, were set upon and killed by a large body of Sakalavas at Marrombo, on the coast. The Hova officials in the custom house at Soondrano were murdered, and all the representatives of the Government in Tulear fled to the island of Nossi Bé. Troops were sent by the Hova Government to reduce the Sakalavas to subjection.

The French protectorate, though recognized by the foreign powers, is repudiated by the Mal-

agasy Government. The treaty of 1885 requires that *exequaturs* should be demanded by foreign consuls through the medium of the French residency. Prime Minister Rainilaiarivony, encouraged by Protestant missionaries, has persistently refused to accept this channel of diplomatic intercourse, and when the question was raised in the case of the United States consul in 1887, the then French resident, Le Myre de Vilers, waived his rights. Mr. Campbell, the United States consul, has upheld the French protectorate, and after its formal recognition by Great Britain, M. Bompard, the French resident general, determined to render it effective in the matter of *exequaturs*, especially since the English opponents of French influence contended that the Anglo-French agreement was invalid, because the English Government was not made cognizant of the concession of M. Le Myre de Vilers to Rainilaiarivony. Herr von Tappenbeck, who arrived as German consul in June, 1891, was not recognized by the Hova authorities because he applied for his *exequatur* through the French representative. Mr. Walter, who succeeded John P. Campbell as American consul at Tamatave, obtained his *exequatur* by applying directly to the Malagasy Government. M. Bompard, on receiving orders from Paris to recede from his position in regard to the German consul, who was unable to discharge his office on account of the dispute, offered his resignation. The French Chamber, on March 12, approved a bill to establish French tribunals in Madagascar with jurisdiction in all cases affecting Europeans. The English residents have not ceased to resist French influence, and have acquired a larger power for obstruction by becoming admitted to a preponderant position in the Hova Council.

The French possessions in the neighborhood of Madagascar are the productive island of Réunion to the east, Ste. Marie off the north coast, Nossi Bé close to the west coast, Mayotte and the Comoro Islands half-way between the northern end of the island and the African shore.

Réunion, or the Isle of Bourbon, 970 square miles in extent, has been French since 1649. The population in 1887 was 163,881. Sugar and rum, coffee, vanilla, and spices are exported, and various kinds of grain and vegetables are grown. The exports in 1888 were 15,600,000 francs in value. The expenditure of the home Government provided for in the budget for 1891 was 4,576,836 francs. The Hindu coolies in 1888 numbered 23,883, and the negroes 14,731. The small island of Ste. Marie, 64 square miles in extent, with 7,667 inhabitants, is also an old French settlement. It produces only cloves for export.

Nossi Bé was placed in 1888 under the authority of the Governor of Diego Suarez. The population of 8,281 Malagasies and Africans cultivate the sugar-cane, coffee, and rice. The expenditure of France in 1890 was 121,482 francs. Mayotte, which has an area of 143 square miles and 10,551 inhabitants, of whom 38 are French, was occupied in 1843. The exports of sugar, rum, and vanilla beans in 1888 were valued at 1,040,000 francs. The expenditure of France in 1890 was 150,662 francs.

Except these islands, the nearest French colony is the naval station of Obock, on the Gulf of Aden. The territory, including the Bay of

Tajurah, is 2,300 square miles, containing 22,370 inhabitants. There is some trade with Shoa and the Somali country. The sum appropriated for Obock in 1891 was 672,191 francs.

The Comoro group, consisting of four larger and numerous small islands, inhabited by about 47,000 people who are mostly Mohammedans, were taken under French protection in 1886. The French did not occupy the islands in force, the Arab princes having acknowledged the protectorate. When the Sultan Abdullah of the island of Anjuan or Johanna died, on Feb. 1, 1891, the negro slaves, who were armed by the contestants for the throne, Salim, the late Sultan's son, and Othman, his brother, revolted on Feb. 28 and plundered the island, threatening to kill their masters if they were not enfranchised in accordance with a promise that had been made some years before to the English consul. Before the trouble began the French flag had been hauled down by the natives. The French resident, Dr. Ormières, and most of the Europeans left the island at the beginning of the disturbances, and when the gunboat "Boursaint" arrived, on March 18, Salim, who had established his authority after a sanguinary struggle, said he would not receive the resident, and wanted no Frenchmen on the island. On the Grand Comoro, the most important island, the people rebelled and deposed the Sultan Said Ali, the ruler protected by France. At Mohilla Island the regent usurped the place of the young Queen, who was being educated in Réunion at the expense of the French Government. The commander of the naval division in the Indian Ocean, Capt. Prouhet, brought on a force sufficient to re-establish French authority, and the three rebellious princes were banished to Obock. A force of 340 marines was landed at Anjouan on April 23, after a bombardment. The town of Montsamoudou was occupied without difficulty, and the rebels were pursued into the interior and brought to submission. The operations were repeated on the other revolted islands.

West African Possessions.—On the western side of the African continent France possesses the old colony of Senegal or Senegambia, the Rivières du Sud, which was detached from Senegal in the beginning of 1890, the French Soudan, the settlements on the Guinea coast, and the Gabun and French Congo territories. The regions over which the authority of France has in some degree been established are about 450,000 square miles.

The French claim the whole coast from Cape Blanco to the boundary of Liberia, with the exception of the English and Portuguese establishments, and the interior as far as the upper Niger. By the Anglo-French agreement of Aug. 5, 1890, Great Britain recognizes a French sphere of influence embracing the region south of Algeria and Tunis as far as a line drawn from Say, on the Niger, to Barruva on Lake Chad. There are 164 miles of railroad in the coast districts of Senegal, and the projected railroad from Medina, at the head of navigation on the Senegal river, to the upper Niger has been built as far as Bafoulabe, 94 miles. The exports of Senegal are ground-nuts, gum, India-rubber, woods, and skins. There were 1,600,000 acres under cultivation in 1886. The value of the imports

in 1888 was 27,995,835 francs, of which 12,515,155 francs were from France, and the value of the exports was 16,548,040 francs, of which 11,742,856 francs went to France. The French Soudan was placed on Jan. 1, 1891, under the administration of a superior commandant with headquarters at Kayes, who acts under the political direction of the Governor of Senegal in St. Louis. The Lieutenant-Governor of the Rivières du Sud, who resides at Konakry, on the Dubreka river, has authority over the territories on the Gold Coast, which were separated into two distinct administrative divisions, the Gold Coast group and the Bight of Benin group, on Jan. 1, 1890. The population of the colony of Senegal proper is 135,223, and that of the Rivières du Sud 47,541, the total white population being 1,470. The total area is about 140,000. The places under French administration on the Gold Coast are Grand Bassam and Assinie, Grand Popo and Agoué, Porto Novo, and Kotonou. Including protectorates, the French claim 25,000 square miles of territory in this region. A treaty of delimitation concluded with Great Britain on Aug. 10, 1889, defines the boundary between Senegal and the British colonies of Gambia and Sierra Leone and between French territory on the Gold Coast and the British colony of Lagos. The latter boundary is a line intersecting Porto Novo at Agarrah creek. The French budget for 1890 provided for an expenditure of 9,353,193 francs in Senegal. The French Government has made great efforts to anticipate Great Britain in establishing its influence on Lake Chad, around which are clustered the rich and well-organized Mohammedan states of Bornu, Wadai, Kanem, and Baghirmi. A claim to Bornu, based on the possession of Sokoto, advanced on behalf of the English Royal Niger Company, is condemned by France as without foundation and as contrary to the African agreement, which is held to have limited the English sphere to the part of Bornu that is bounded by Sokoto and Adamawa. The approach to Bornu from the French territory on the Niger is defended by the Mohammedan despot Ahmadou, and the route through the desert farther north is blocked by a population of the vigorous and valiant Tuaregs. Col. Achinard, the commandant of the French Soudan, marched 700 miles in April, 1890, through the territory of the pagan Bambaras, and by a brilliant stroke captured Segou, Ahmadou's capital, which was defended by his son. The operations have been continued with interruptions only during the rainy season. On Jan. 1, 1891, Col. Achinard's column, after a brief encounter with the Toucouleurs at Koriga on Dec. 29, completely defeated Ahmadou's army of 8,000 men and drove them out of Niouro with a loss of 400 killed, the French losing 53 native soldiers. Ahmadou was pursued, and his army was again defeated at Touri, where 1,500 prisoners were taken. He was compelled to retire to the more remote part of his empire. The fetich worshippers of the coast and those of the southern part of the French sphere who formerly owned Ahmadou's despotic sway were confirmed in their allegiance to France by these brilliant victories. Niouro and Kaarta were restored to their old Bambara chiefs. The French force numbered but 700 rifles, but the artillery detachment, using

melinite shells, rendered it irresistible. The chain of posts between Senegal and the Niger is nearly complete. Later operations against Ahmadou's vassal Samory cost greater sacrifices, several French officers and more than 100 soldiers being wounded at the taking of Diéna. If French dominion is to be established on the shore of Lake Chad it can not wait for the building of the Trans-Sahara Railroad, which will run through 1,500 miles of desert country and traverse the land of the hostile Tuaregs, who are fanatical and irreconcilable foes of Christianity. In the winter of 1890-'91 nine expeditions set out from various points on the west coast for Lake Chad. The most important was that of Paul Crampel, who left Gabon with the object of exploring the unknown regions of upper Ubangi and Baghirmi, and establishing by right of prior discovery and by treaty the desired link between the French Congo and the Central Soudan to the east of Adamawa, which is acknowledged to be outside the French sphere and is left to be contended for or divided between England and Germany. The interior, behind the French, English, and German possessions, from the Congo to Lake Chad, is believed to be one of the most desirable parts of Africa, and its situation is such that the first of the three countries participating in the race for Lake Chad that succeeds in concluding treaties with the native chiefs can round off its dominions by annexing contiguous districts, and thus cut off the others from the central part of the continent. The aim of the French was to annex the whole basin of the Shari, including Bornu and Baghirmi, and extend the Trans-Sahara railroad to Brazzaville by way of the Mobangi river. Besides the Crampel expedition, one under M. Povel, chief of the French station at Bangui, explored the right bank of the Mobangi, and M. Cholet's explorations in the basin of the Sanga as far as the fourth degree of north latitude were continued by one of the agents of the Governor of the French Congo. Lieut. Mizon, who set out by way of the Biue for the purpose of concluding treaties with chiefs to the east of the recognized British sphere in Sokoto, was prevented from accomplishing his mission by the officers of the British Niger Company, whose attitude encouraged the natives to attempt to assassinate the members of the expedition, and who first detained it until the river was too low for the French steamer to navigate, and then gave permission for it to proceed only on condition that it should not go by land. Two other expeditions set out from Senegal for the upper Niger country. Lieut. Crampel's expedition consisted of 6 white men and 253 blacks. It followed the Mobangi route, reaching Bangui on Sept. 25, 1890. The people were much disturbed, and in pushing on into the country of the cannibals he had many desperate battles with the natives. He explored the tributaries of the Mobangi and made treaties with the chiefs. On April 9, while an expedition under M. Dybowski was on the way to support Crampel, the Crampel party was attacked in the Matonga country, and only one European, M. Nébout, and 11 Senegalese escaped massacre. M. Fourneau, who led the expedition to explore the Sanga valley, advanced up the Likelle tributary and the Sodi, where he was attacked, and

to punish the savages burned a village. Farther on he encountered large bands of hostile savages, and on May 10 the expedition was surprised in the night, many were killed, all fled except the Senegalese soldiers, and the leader, painfully wounded, retreated with the remnant, constantly fighting, until he reached the friendly tribe of the Mokelos. His farthest point was in 6° 30' of north latitude. The Lieutenant-Governor at Konakry in 1891 took formal possession of the coast from St. Andreas to Cavally, nearly 200 miles, asserting that it has been French territory for many years by virtue of long-existing treaties, though a part of it has long been claimed by the Liberians. The murder of two Frenchmen by the blacks of Lahou, on the Gold Coast, was avenged in May by a small expedition, which defeated 1,200 warriors armed with modern rifles. The French authorities deposed Dinah Salifu, King of the Nalus, who visited the Paris Exposition, on account of the tyranny and extortion that he practiced to enable him to imitate European sovereigns.

The Spanish Government has laid claim for several years to a coast line of about 100 miles from the Rio Campos to Cape Santa Clara, and, on the *Hinterland* principle, to an area of about 50,000 square miles on the River Muni. Spanish slave traders formerly used Corisco Island and stations on the opposite coast as depots for slaves to be shipped across the Atlantic, and in 1843 the local chiefs are said to have formerly recognized Spanish sovereignty. The French Government conceded the right of Spain to a small patch of the coast around Cape St. John and to Corisco Island, which is of little value, and in 1891 a joint commission met in Paris for the purpose of determining the extent of territory that the chiefs had the right to transfer to Spain. The Spanish Government had rejected an offer of the French to submit the decision to the Pope or some other arbitrator. There was little expectation of an agreement of the joint commission, for the French delegates, while willing to concede the Elobey Islands, where Spain had an agent, and the posts actually occupied, would not admit even a colorable claim to the territories on the Muni and Benito rivers, or to a *Hinterland* that would deprive France of a great part of her Congo territory. In the extreme north Spain disputed the French claim to the desert region south of Morocco, claiming the coast and 240,000 square miles, including the route of the proposed Trans-Sahara Railroad.

The Gabon and Congo territories, which are administratively distinct, although continuous, have a total area of 267,900 square miles, and a population estimated at 186,500 for Gabon and 500,000 for the French Congo. A chain of 27 stations extends along the coast and up the Igowe into the Congo region. Besides the military there are 300 Europeans. The exports are ivory, palm oil, caoutchouc, and ebony. The planting of sugar-cane, vanilla, coffee, cotton, and tobacco has been tried experimentally. For the development of production and trade in this region and in other parts of West Africa, as at Grand Bassam and the French Soudan, the Superior Council for the Colonies, organized in January, 1891, recommended the system of chartered companies.

American Colonies.—Besides the islands of Martinique and Guadaloupe (see West Indies), France possesses in America the small islands of St. Pierre and Miquelon, stations reserved for the Newfoundland fisheries when the French Canadian possessions were ceded to England, and French Guiana in South America. The population of St. Pierre and Miquelon in 1887 was 5,992. The value of the catch of cod in 1887 was 13,439,532 francs, and the number of vessels that visited the islands was 2,362. The local revenue in 1890 was 439,586 francs; the expenditure of the French Government in 1891 was 348,332 francs.

The population of the colony of Guiana or Cayenne in 1888 was 25,796; the area is 46,850 square miles. There are about 4,400 convicts in confinement or at large. The cost of the colony to France in 1889 was 1,428,169 francs. Since 1817 France and Holland have had a dispute about the limits of their establishments in Guiana. The matter remained in abeyance till the discovery of gold placers in the contested territory, and on Nov. 29, 1888, the two governments agreed to submit it to the arbitration of the Czar. By the Treaty of Utrecht in 1713 the Maroni river was declared the boundary up to its source. The French asserted that the Tapanahony was the upper course of the Maroni, while the Dutch held that the Aoua was. This part of Guiana passed into the possession of Portugal, and in 1815 was ceded back to France. The Dutch had military posts on the Aoua in the latter part of the last century, the French authorities have often recognized the responsibility of the Dutch for the behavior of the negroes settled on the disputed territory, and in 1861 the evidence presented to a mixed commission was on favor of the claim that the Aoua forms the upper course of the Maroni. On these grounds the Emperor Alexander, in delivering his decision on May 25, 1891, awarded the whole territory between the two rivers to the Nether-

lands. There is a dispute with Brazil concerning an area much greater and more essential to the development of the French colony.

Possessions in Oceania.—In the Pacific Ocean France has the penal colony of New Caledonia, with the Loyalty Islands and the Society Islands, the Marquesas, Tuamotu, Gambier, and Tubuai groups, and to the west of Samoa the Wallis and Howe islands. New Caledonia, having an area of 7,700 square miles, with a population of 62,752, including 3,476 soldiers and civil officials and 9,992 convicts, is under the administration of a governor with large powers. The expenditure of France in 1891 was 3,066,669 francs. The imports in 1888 were 9,200,000 francs, and the exports 3,000,000 francs. Coffee, cocoa-nuts, cotton, vanilla, and manioc are cultivated. Nickel, chromate of iron, and cobalt are largely exported. The most important product is nickel, which is found in over two fifths of the area of the island. The most valuable mines can not now be worked for want of means of transport to the sea. About one tenth of the nickel-producing land has been granted to companies or applied for, and of this about one fourth is actually worked. The ore is hydrated silicate of nickel and magnesia, containing from 8 to 16 per cent. of the metal. There were 5,000 tons of this ore exported in 1890, besides 1,500 tons of chrome and 700 tons of cobalt. The export of the nickel ore is rapidly increasing. The supply is believed to be inexhaustible. Next to New Caledonia, the most important islands subject to France are Tahiti, area 412 square miles, and Moorea, area 50 square miles, in the Society Archipelago. Their population is 12,800. The exports consist of copra, cotton, sugar, coffee, and pearl shells. The exports to the United States in 1889 were \$200,000 in value, about two fifths of the total imports, and the imports from the United States were valued at more \$330,000, constituting two thirds of the total.

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GEORGIA, a Southern State, one of the original thirteen, ratified the Constitution Jan. 2, 1788; area, 59,475 square miles. The population, according to each decennial census, was 82,548 in 1790; 162,686 in 1800; 252,433 in 1810; 340,985 in 1820; 516,823 in 1830; 691,392 in 1840; 906,185 in 1850; 1,057,286 in 1860; 1,184,109 in 1870; 1,542,180 in 1880; 1,837,353 in 1890. Capital, Atlanta.

Government.—The following were the State officers during the year: Governor, William J. Northen, Democrat; Secretary of State, Philip Cook; Comptroller-General, William A. Wright; Treasurer, Robert U. Hardeman; Attorney-General, George N. Lester; Commissioner of Agriculture, Robert T. Nesbitt; State School Commissioner, S. D. Bradwell; Railroad Commissioners, Allen Fort, L. N. Trammell, and James W. Robertson; Chief Justice of the Supreme Court, Logan E. Bleckley; Associate Justices, Thomas J. Simmons and Samuel Lumpkin.

Finances.—The bonded State debt, which amounted to \$8,261,340 on Jan. 1, remained

substantially unchanged during the year. In consequence of the large appropriations made by the Legislature, the rate of State taxation for the year was raised to \$5.08 on each \$1,000, the highest rate levied since the civil war. Of this total, \$3.50 on each \$1,000 was levied for general purposes, \$1.33½ for schools, and 24½ cents for the sinking fund. The total rate for 1890 was \$3.96 on each \$1,000. The assessed valuation of property in the State for 1891 exceeds \$400,000,000.

Education.—The latest report of the State School Commissioner contains the following public-school statistics for the school year ending in July, 1890: Number of white schools, 4,529; number of colored schools, 2,286; schools under local laws, 232; white pupils enrolled, 230,595; colored pupils enrolled, 150,702; total enrollment, white and colored, 381,297; average daily attendance, white and colored, 240,790; total expenditures for school purposes, \$1,190,353.91; teachers' wages, \$998,575.04; average length of school year, four months; the total population

of school age, 560,281. The State School fund for 1890 amounted to \$643,420.14, derived from the following sources: From tax on excess of taxable property over \$360,000,000, \$50,575.90; amount received from school-tax levy, \$330,000; half rental of State railroad, \$150,000; dividend Georgia railroad stock, \$2,046; tax on liquor dealers, \$71,861.80; net fees from inspectors of fertilizers, \$17,451.15; hire of State convicts, \$17,417.29; tax on shows, \$5,248. Of the total fund, the sum of \$638,656.05 was apportioned to the various counties for the support of schools. There was collected in the several counties from poll taxes \$193,757.64, which is also applied for the support of schools, and \$419,038.86 was raised by the local authorities for the same purpose, making the total sum raised in the State for schools during the year \$1,251,452.55. Recent State legislation has been favorable to public-school interests.

Population by Races.—The following table shows the white and colored population of the State in 1880 and 1890, as reported by the Federal census:

COUNTIES.	WHITE.		COLORED.	
	1890.	1880.	1890.	1880.
Appling.....	6,186	4,084	2,490	1,192
Baker.....	1,581	1,742	4,568	5,565
Baldwin.....	5,200	4,512	9,406	9,294
Banks.....	7,002	6,880	1,560	1,507
Bartow.....	14,510	12,419	6,105	6,271
Berrien.....	8,266	6,788	2,488	886
Bibb.....	18,846	11,429	23,519	15,700
Brooks.....	6,296	6,070	7,688	6,057
Bryan.....	2,768	2,868	2,752	2,561
Bulloch.....	8,972	5,797	4,740	2,256
Burke.....	5,758	6,080	22,742	21,081
Butts.....	5,128	4,277	5,487	4,084
Calhoun.....	2,221	2,354	6,217	4,670
Camden.....	2,019	2,091	4,159	4,092
Campbell.....	6,604	6,085	3,511	3,885
Carroll.....	18,896	14,591	8,905	2,810
Catoosa.....	4,788	4,127	648	612
Charlton.....	2,458	1,794	851	860
Chatham.....	22,828	17,494	84,050	27,515
Chattahoochee.....	1,822	5,180	2,017	2,040
Chattooga.....	9,185	7,981	1,521	1,626
Cherokee.....	18,890	12,699	8,154	6,888
Clarke.....	7,029	5,818	4,918	3,852
Clay.....	2,899	2,798	4,918	8,089
Clayton.....	5,242	4,938	8,058	888
Clinch.....	4,262	3,800	2,890	6,012
Cobb.....	15,495	14,784	6,849	1,042
Coffee.....	6,592	4,028	8,887	105
Colquitt.....	4,820	2,422	474	7,485
Columbia.....	8,214	3,090	8,067	11,797
Coweta.....	9,729	9,805	12,625	4,719
Crawford.....	4,151	8,940	5,164	1,084
Dade.....	4,605	8,618	1,102	886
Dawson.....	5,849	5,479	268	10,188
Decatur.....	9,065	8,889	10,862	4,543
De Kalb.....	11,184	9,984	6,005	1,892
Dodge.....	6,127	3,506	5,825	5,828
Dooly.....	9,188	6,592	8,658	10,670
Dougherty.....	1,944	1,962	10,262	1,471
Douglas.....	5,996	5,463	1,795	4,596
Early.....	8,578	3,015	6,214	500
Echols.....	2,045	2,053	1,934	2,751
Effingham.....	8,809	8,228	2,230	6,872
Elbert.....	7,484	6,085	7,892	3,085
Emanuel.....	9,279	6,660	5,428	193
Fannin.....	8,604	7,112	120	2,868
Fayette.....	6,859	5,742	8,069	9,460
Floyd.....	17,848	14,958	10,586	1,487
Forsyth.....	9,886	9,072	1,268	2,547
Franklin.....	11,868	8,906	8,907	20,842
Fulton.....	48,801	28,295	35,748	126
Gilmer.....	8,994	8,258	80	1,071
Glascocock.....	2,580	2,566	1,200	4,300
Glynn.....	5,508	2,195	7,817	1,820
Gordon.....	11,008	9,847	1,750	

COUNTIES.	WHITE.		COLORED.	
	1890.	1880.	1890.	1880.
Greene.....	5,880	5,578	11,721	11,974
Gwinnett.....	16,889	16,015	8,010	8,515
Habersham.....	9,999	7,357	1,584	1,361
Hall.....	16,301	13,040	2,746	2,276
Hancock.....	4,866	5,044	12,288	11,948
Harrison.....	10,170	8,521	1,146	158
Harris.....	5,907	6,450	10,590	9,286
Hart.....	7,878	6,212	2,600	2,882
Heard.....	6,192	5,674	3,365	2,195
Henry.....	6,610	7,961	7,610	6,229
Houston.....	6,220	6,024	16,393	16,890
Irwin.....	4,204	2,161	2,112	735
Jackson.....	13,705	11,189	5,471	5,157
Jasper.....	5,961	4,256	8,518	7,598
Jefferson.....	6,945	5,581	10,868	10,090
Johnson.....	4,614	3,455	1,515	1,845
Jones.....	8,470	8,758	8,880	7,860
Laurens.....	7,556	5,702	6,191	4,851
Lee.....	1,513	1,789	7,591	8,827
Liberty.....	4,145	3,581	8,784	7,061
Lincoln.....	2,454	2,254	3,692	4,158
Lowndes.....	7,041	5,412	8,058	5,687
Lumpkin.....	6,419	6,075	448	451
McDuffie.....	3,268	3,480	5,526	6,019
McIntosh.....	1,241	1,546	5,229	4,695
Macon.....	4,132	4,288	9,051	7,887
Madison.....	7,325	5,892	8,699	2,586
Marion.....	8,410	4,294	4,818	4,804
Marlow.....	9,154	7,797	11,568	9,854
Meriwether.....	2,689	2,827	1,586	1,898
Miller.....	5,592	5,484	676	777
Milton.....	4,762	4,189	6,144	5,298
Mitchell.....	6,694	6,693	12,608	12,115
Monroe.....	5,558	8,510	8,695	1,871
Montgomery.....	5,028	4,249	11,012	9,782
Morgan.....	7,960	7,362	496	506
Murray.....	12,276	8,995	15,475	10,827
Muscogee.....	7,121	6,740	7,189	6,888
Newton.....	3,867	3,827	8,546	3,024
Oconee.....	5,617	5,469	11,884	9,981
Oglethorpe.....	10,422	9,908	1,626	984
Paulding.....	7,825	6,645	357	145
Pickens.....	4,880	3,065	1,995	1,472
Pierce.....	8,107	7,780	8,198	8,069
Plke.....	10,208	7,805	4,736	4,147
Polk.....	6,667	5,824	9,902	8,325
Pulaski.....	8,476	7,778	8,055	11,021
Putnam.....	1,417	1,773	8,055	2,619
Quitman.....	5,489	4,437	167	197
Rabun.....	5,748	5,545	9,519	7,766
Randolph.....	22,504	17,185	22,662	17,464
Richmond.....	4,094	4,149	2,719	2,689
Rockdale.....	2,215	2,229	3,929	3,078
Schley.....	7,018	6,178	7,406	6,618
Screven.....	5,802	5,439	7,815	7,146
Spalding.....	4,154	4,876	11,528	9,822
Stewart.....	6,575	6,050	9,222	12,189
Sumter.....	4,068	4,448	9,220	9,667
Talbot.....	2,486	2,312	4,856	4,722
Tallaferro.....	7,064	5,014	8,169	1,974
Tattnall.....	4,578	4,770	4,088	8,827
Taylor.....	8,116	2,666	2,361	2,161
Telfair.....	5,272	4,268	9,291	6,188
Terrell.....	11,121	8,884	15,080	12,218
Thomas.....	8,988	8,157	76	104
Towns.....	7,027	6,595	13,066	13,970
Troup.....	2,780	2,844	8,465	6,074
Twiggs.....	7,582	6,821	167	110
Union.....	6,099	6,188	6,089	6,267
Upson.....	11,820	9,492	1,962	1,568
Walker.....	10,228	9,821	7,944	6,801
Walton.....	5,138	8,015	8,550	1,144
Ware.....	4,102	4,089	6,855	6,846
Warren.....	10,262	9,449	14,973	12,515
Washington.....	5,271	4,060	2,214	1,920
Wayne.....	2,408	2,667	8,292	2,570
Webster.....	5,482	4,761	689	590
White.....	10,949	9,689	1,966	2,210
Whitfield.....	4,704	5,173	8,183	698
Wilcox.....	5,564	2,418	12,517	10,512
Wilkes.....	5,507	6,550	5,274	5,511
Wilkinson.....	5,829	4,065	4,219	1,894
Worth.....				
The State.....	978,462	816,906	868,716	725,188

There were also 110 Chinese, 1 Japanese, and 64 Indians in the State in 1890.

Legislative Session.—The adjourned session of the State Legislature began early in July and continued through Oct. 15. Although heralded as a reform Legislature and controlled by the Farmer's Alliance in both Houses, it exceeded all of its predecessors in the amount of its appropriations. The total sum appropriated was \$2,448,100, distributed as follows: Soldiers' pensions, \$185,000; widows' pensions, \$400,000; Common-school fund, \$585,000; settlement of Western and Atlantic Railroad betterments, \$120,000; expenses of government, \$920,000; Girls' Industrial School, \$32,500; Technological School, \$18,000; miscellaneous, \$187,500. It became necessary, in consequence of these appropriations, to add 1½ mill to the State tax levy for general purposes for 1891.

A noteworthy result of the session was the passage of an act requiring steam railroad companies to provide separate compartments for the white and colored races in all passenger cars. Efforts were made without success to impose the same requirements upon electric street-railway companies. But conductors on street cars were given police powers and authorized to assign all passengers to their seats.

Three important amendments to the State Constitution were proposed for submission to the people at the election of 1892. One of these repeals the section requiring charters of railroads, banks, insurance companies, etc., to be granted by the Legislature, and provides that they shall be issued by the Secretary of State, pursuant to general fixed laws to be enacted. This reform will reduce by one half the number of bills to be considered at each legislative session. In the same line of reform an act was passed requiring all towns of fewer than 2,000 inhabitants to obtain their charters and amendments thereto from the courts instead of from the Legislature. The two other constitutional amendments provide for annual sessions of the Legislature, limited to fifty days each. By another act the Supreme Court was required to hear all cases brought to that tribunal upon their substantial merits, and was forbidden to dismiss cases upon mere technical defects. Telegraph and express companies were placed under control of the Railroad Commission.

A radical change was made in the rules of evidence. Under the old law, if a party did not choose voluntarily to testify in his case, he could not be compelled by the other party unless the latter made him his (the latter's) own witness. The new law allows either party to call the other to the stand and cross-examine him and impeach him if necessary, as if he had testified in his own behalf. Primary elections were brought under the protection of the law by punishing fraud and false swearing therein. The liquor traffic was practically driven within city walls by an act prohibiting the sale of intoxicating liquor within three miles of a church or a school outside of cities. Two bills were passed for the benefit of labor, one to prevent "blacklisting" of employés, the other to prevent railroads from requiring engineers and trainmen to work more than thirteen consecutive hours without rest.

An act designed to destroy the Southwestern Tariff Association, so called, which was regarded as a combination to control insurance rates, pro-

vides that it shall be unlawful for insurance companies doing business in the State to form pools or combinations for the purpose of lessening or defeating competition, and that if any insurance company or its agents enter into such a combination or pool, when it shall be made to so appear to the insurance commissioners, the license of such company shall be revoked.

The law further provides that if any company shall refuse to take a risk, or increase the rate of any risk, or charge an apparently exorbitant rate, the person owning such risk may make complaint to the insurance commissioner. If it is found on investigation that the increased rate or the refusal of a risk or the exorbitant charge is due to any combination to lessen or defeat competition in which the company complained of is a party, then such company's license is to be revoked.

Provision was made for distributing the sum received by the State from the Federal Government as a refund of the direct-tax levy to the persons who originally paid the tax, or to their heirs. An offer to transfer Rock College, near Athens, to the State, to be used as a normal college, was accepted, and the college was established as a branch of the State University. It occupies 10 acres of land and has a yearly income of \$1,000 from funds left by the founder, ex-Gov. Gilmer.

As a result of long discussion and a persistent effort to secure a declaration by the Legislature in favor of the Ocala platform of the National Farmers' Alliance, the following resolution was passed:

That our Senators and Representatives in Congress be, and they are hereby, requested to use their influence and votes to secure legislation which will correct the evils complained of by the National Farmers' Alliance and Industrial Union in convention at Ocala, Fla., and the evils complained of by the Democratic party, especially those that relate to the present financial condition and taxation of the government.

Other acts of the session were as follow:

To require common carriers to receive live stock for transportation.

To provide for honorable retirement of commissioned officers.

To regulate the business of building and loan associations.

To prescribe conditions under which long-range fire-arms shall be carried.

To prescribe how payment of pensions shall be made.

To require railroad, street railroad, and telegraph companies and other corporations to give their employés reasons in writing for their discharge.

To make appropriations for State expenses for the fiscal year 1891-'92, and to provide that the revenue derived from the excess of taxable property over \$415,000,000 up to \$445,000,000 shall be appropriated to the School fund.

To create a game law for the State.

To set apart Labor Day as a legal holiday.

Coal.—In the northwestern counties of Georgia an area of about 200 square miles is underlaid by the eastern edge of the Appalachian coal field near its southern extremity, embracing portions of Dade and Walker Counties. The coal is semi-bituminous, and yields a fair quality of coke. The only important mining operations are at Coal City, in Dade County. In North

Carolina coal deposits exist in Stokes and Rockingham Counties along Dan river, and in Chatham and Moore Counties in the valley of Deep river. Only one company is mining coal on a commercial basis in that State. For 1889 the coal product of Dade County, Georgia, and Chatham, and Stokes Counties, North Carolina, was 226,156 tons, worth on an average \$1.50 a ton at the mines. The total number of employés in 1889 in these counties, including office force, was 740, to whom was paid in wages \$265,464. The number of acres owned in these counties was 20,733, and the value of mines and improvements \$724,500.

GERMANY, an empire in central Europe, constituted at the close of the Franco-German War, when the states of the North German Confederation, the Kingdoms of Bavaria and Württemberg, and the Grand Duchies of Hesse and Baden invited the King of Prussia to assume the dignity of German Emperor. The Empire was proclaimed at Versailles on Jan. 18, 1871, and the Constitution, by the terms of which the states of Germany entered into a "perpetual union for the protection of the *Reich* and the welfare of the German people," was promulgated on April 16, 1871. The *Deutscher Kaiser* or German Emperor is the *Kriegsherr* or lord of military forces, and has power to make alliances and treaties, to declare war, and conclude peace, except in an aggressive war he must have the consent of the Federal Council. In all international relations he can act without consulting the other German princes, and all diplomatic representatives are accredited by him. The chief imperial functionary is the Chancellor. The legislative power in matters concerning the military and naval forces, finances, commerce, domicile, communications, and justice is exercised by the Federal Council jointly with the Reichstag. The Federal Council or Bundesrath is composed of 58 members, of whom 17 are plenipotentiaries of Prussia, 6 of Bavaria, 4 of Saxony, 4 of Württemberg, 3 of Baden, 3 of Hesse, 2 of Mecklenburg-Schwerin, 2 of Brunswick, and 1 one of the other states and free cities forming the empire, nominated by the chiefs of the Government in each state. The Reichstag or German Parliament contains 397 deputies, elected for five years by the direct suffrage of all citizens twenty-five years of age. The Constitution was modified by the law of March 19, 1888, which made the legislative period from 1890 five years instead of three. The members of the Bundesrath are appointed for each session. Prussia elects 236 members to the Reichstag, Bavaria 48, Saxony 23, Württemberg 17, Alsace-Lorraine 15, Baden 14, Hesse 9, Mecklenburg-Schwerin 6, Oldenburg 3, Saxe-Weimar 3, Brunswick 3, Hamburg 3, Saxe-Meiningen 2, Anhalt 2, Saxe-Coburg-Gotha 2, Mecklenburg-Strelitz 1, Saxe-Altenburg 1, Waldeck 1, Lippe 1, Schwarzburg-Rudolstadt 1, Schwarzburg-Sondershausen 1, Reuss-Schleiz 1, Schaumburg-Lippe 1, Reuss-Greiz 1, Lübeck 1, and Bremen 1. The Deputies receive no pay. The Emperor can not veto measures passed by the Reichstag and Bundesrath. Alsace-Lorraine is represented in the Bundesrath by four commissioners appointed by the Statthalter, who have no votes. At the general election of 1890 the number of registered voters

was 10,145,877, or 21.7 per cent. of the total population, and the number of ballots cast was 7,261,650, or 71.6 per cent. of the total number of qualified electors. The Bundesrath and Reichstag are convoked annually by the Emperor, who has the right to prorogue Parliament, and may dissolve the Reichstag with the consent of the Bundesrath. Without its consent he may not adjourn the Reichstag for more than thirty days, and in the event of a dissolution new elections must be held within sixty days, and the new Reichstag be convoked within ninety days. All legislative measures must receive an absolute majority vote in the Bundesrath and the Reichstag, and received the Emperor's assent and be countersigned by the Chancellor of the Empire.

The Emperor is Wilhelm II, born Jan. 27, 1859, eldest son of Friedreich, whom he succeeded as King of Prussia and German Kaiser on June 15, 1888. The Chancellor of the Empire is Gen. Georg von Caprivi, born in 1831, who succeeded Prince Otto von Bismarck on March 20, 1890. The Secretaries of State, who act independently of each other under the supervision of the Chancellor, were in the beginning of 1891 as follow: Ministry of Foreign Affairs, Freiherr Marschall Bieberstein; Imperial Home Office and Representative of the Chancellor, Dr. von Bötticher; Imperial Admiralty, Herr Hollman; Secretary and Admiral, Freiherr von der Goltz, Commander-in-Chief; Ministry of Justice, Herr von Oehlschläger; Imperial Treasury, Freiherr von Maltzahn; Post-office, Dr. von Stephen; Railroads, Herr von Maybach; Imperial Exchequer, Herr von Stünzner; Invalid Fund, Dr. Michaelis; Imperial Bank, Dr. Koch; Debt Commission, Herr Meinicke.

Area and Population.—The area of the Empire is 211,168 square miles. The population on Dec. 1, 1885, was 46,855,704. The preliminary returns of the census of the empire, taken on Dec. 1, 1890, make the total population 49,420,842 persons, of whom 29,957,302 are Prussians.

The number of marriages in 1888 was 376,654; the number of births was 1,828,379, of which 169,645 were illegitimate; the number of deaths was 1,209,798. Of the children born, 940,917 were boys and 887,461 girls. The emigration in 1889 was 96,032 persons, of whom 90,197 were bound for the United States, 2,412 for Brazil, 2,243 for other American countries, 496 for Australia, 422 for Africa, and 262 for Africa. The number of persons who emigrated in 1890 by way of German ports—Antwerp, Rotterdam, and Amsterdam—was 91,925, of whom 59,702 were from Prussia, 9,725 from Bavaria, 5,987 from Württemberg, 3,546 from Baden, 2,577 from Saxony, 2,122 from Hesse, and the rest from the minor states. Including those who shipped at French ports, the emigration in 1890 was about 97,700. The population of Berlin in 1890 was 1,579,244; of Hamburg, 570,534; of Leipzig, 293,525; of Munich, 348,317; of Breslau, 335,174; of Cologne, 289,537; of Dresden, 276,085; of Magdeburg, 201,913; of Frankfurt-on-the-Main, 179,660; of Hanover, 163,100; of Königsberg, 151,151. Including the suburbs, Hamburg, with 570,534 inhabitants, is the second city in the empire, and Leipzig, with 355,485, takes the third place. There were in 1871 only 8 cities of more than 100,000 inhabitants, and in 1890 there were

26. During six years the population of Berlin had increased 3·65 per cent. and that of the other 25 cities 2·83 per cent. The urban population in 1885 constituted 36·1 per cent., of the total in 1871; in 1885 the proportion had risen to 43·7 per cent.; and in 1891 it was 47·8 per cent.

Finances.—The imperial revenue is derived from customs, certain excise duties, stamps, and the post-office, telegraphs, and state railroads. For the year ending March 31, 1891, the ordinary military and naval expenditures were 482,691,000 marks (1 mark = 24 cents), the extraordinary expenditures were 279,246,000 marks, the debt charges were 46,623,000 marks, and the general expenses of the Government were 451,777,000 marks. The total revenue for the year ending March 31, 1892, was estimated at 1,130,645,888 marks, of which 588,996,140 marks are derived from customs and excise, 34,506,000 marks from stamp duties, 23,790,807 marks from posts and telegraphs, 20,298,500 marks from railroads, 2,691,700 marks from the Imperial Bank, 1,185,300 marks from the Government printing office, 8,739,719 marks from receipts of the various departments, 3,128,955 marks from various other sources, 441,600 marks from interest on imperial funds, 24,453,293 marks from interest on the Invalid fund, 98,790,369 marks from extraordinary sources, and 322,623,505 marks from matricular contributions or assessments on the states of the empire for the difference between the estimated receipts and expenditure. Of the total expenditure, 390,025 marks are appropriated for the Reichstag, 148,260 marks for the Chancellery, 9,161,415 marks for foreign affairs, 16,221,098 for the Ministry of the Interior, 412,550,954 marks for the army, 42,818,633 marks for the navy, 1,956,156 marks for the Ministry of Justice, 336,216,420 marks for the Treasury Department, 304,090 for the Ministry of Railways, 53,861,500 marks for the service of the debt, 607,583 marks for the Audit Office, 40,905,640 marks for pensions, 25,453,293 marks for the Invalid fund, 540,000 marks for increase of salaries, and 189,510,821 marks for extraordinary purposes. The extraordinary expenditure includes 71,303,510 marks for the army, 51,062,150 marks for the navy, 30,700,000 marks for the Interior Department, and 10,242,500 marks for the debt.

The funded debt in the beginning of 1890 amounted to 976,502,000 marks. To meet extraordinary expenditures a further loan of 257,007,000 marks was authorized. The unfunded debt represented by treasury bills was 126,552,405 marks on March 31, 1889. The Invalid fund at that date amounted to 476,649,024 marks, 3,459,450 Frankfort florins, and 5,563,462 silver marks. Of the Fortification fund, 138,548 marks were unexpended, and the fund for the erection of the Reichstag building amounted to 16,520,453 marks. The war treasure saved from the French indemnity and hoarded in the fortress of Spandau is 120,000,000 marks in gold coin. On Feb. 20, 1891, the books were opened for a new imperial loan of 200,000,000 marks, and for Prussian consols to the amount of 250,000,000 marks.

The budgets of the several German states, with their debts, incurred mainly for railroad construction, are given, in marks, in the following table, the figures relating in most cases to 1891 and in others to the year before :

STATES.	Revenue.	Expenditure.	Debt.
Alsace-Lorraine . . .	45,475,486	44,369,546	25,801,500
Anhalt	10,610,090	10,610,000	2,203,806
Baden	50,145,456	49,150,612	390,647,901
Bavaria	280,291,642	280,291,642	1,888,514,776
Bremen	16,216,500	29,580,700	68,625,200
Brunswick	12,106,000	12,106,000	26,129,671
Hamburg	51,528,200	52,885,800	266,167,784
Hesse	21,854,025	21,701,060	35,695,308
Lippe	1,088,809	1,083,299	810,399
Lübeck	3,469,816	3,459,516	18,947,667
Mecklenburg-Schwerin	10,499,450	10,439,450	40,828,042
Mecklenburg-Strelitz	7,660,810	8,177,850	6,000,000
Oldenburg	1,591,673,942	1,501,673,942	5,204,724,261
Prussia	1,051,778	1,051,778	213,750
Reuss-Greiz	1,771,326	1,754,341	1,040,550
Reuss-Schleiz	3,322,554	3,332,589	911,678
Saxe-Altenburg	1,647,800	2,074,408	3,408,768
Saxe-Coburg and Gotha	6,393,780	5,716,280	12,768,661
Saxe-Weimar	7,696,040	7,696,040	5,844,565
Saxony	46,310,207	46,310,207	647,886,900
Schaumburg-Lippe	765,062	765,062	510,000
Schwarzburg-Rudolstadt	734,400	734,400	4,271,200
Schwarzburg-Sondershausen	820,816	820,816	2,462,449
Waldeck	1,187,810	1,187,810	2,229,900
Württemberg	60,731,640	61,040,980	480,731,605

The Army.—Every German capable of bearing arms may be called upon to do service in the standing army for seven years. He may be summoned at the age of eighteen, but as a rule his service begins after he has passed his twentieth year. He serves three years in the active army, and for the remaining four he belongs to the reserve of the active army. For the next five years he may be called upon to serve in the first ban of the Landwehr, and for seven more in the second ban. The Landsturm embraces all physically competent men between the ages of seventeen and forty-five who are inscribed in the standing army, the Ersatz troops, or the Landwehr; and it is divided into two bans, the first of which consists of those under, and the second of those over, the age of thirty-nine. The Landsturm can not be called upon to serve beyond the frontiers. The conscripts are chosen by lot from the 300,000 or more able-bodied men who arrive annually at the age for entering the army. All who are not drawn for the active army are enrolled in the Ersatz troops for twelve years, and then pass into the Landsturm. A part of the Ersatz men receive twenty weeks of military training. About 8,000 young men are admitted to the army every year as volunteers, who are released from further active service on serving for one year, if they conform to the required intellectual requirements and pay their own expenses. On passing examinations, one-year volunteers may become commissioned officers. The non-commissioned officers are taken by preference from among the soldiers who have shown capability, and for adequate pay are willing to adopt the military life as a profession. Intelligence and good conduct earn for men of the regular army an indefinite leave of absence after two years of active service.

The standing army is organized territorially in 19 army corps: First, East Prussia; Second, Pomerania; Third, Brandenburg; Fourth, Saxony; Fifth, Posen; Sixth, Silesia; Seventh, Westphalia; Eighth, Rhineland; Ninth, Schles-

wig-Holstein; Tenth, Hanover; Eleventh, Hesse-Nassau; Twelfth, Saxony; Thirteenth, Württemberg; Fourteenth, Baden; Fifteenth, Alsace; Sixteenth, Lorraine; Seventeenth, West Prussia; and the First and Second Bavarian corps. In addition, there are the Prussian corps of the Guards and the Hessian division, which is to be strengthened to form the Twenty-first Corps in case of war. The Bavarian troops, and in a less degree those of Württemberg and Saxony, have an independent administration, which is more formal than real, for the Kaiser appoints all superior officers and exercises a sufficient degree of supervision to secure cohesion and efficiency.

The strength of the standing army in 1890 was as follows: 171 regiments of infantry, with 10,412 officers and 310,069 men; 21 battalions of rifles, with 446 officers and 11,785 men; 277 Landwehr district commands, with 462 officers and 4,862 men, and 2,174 surgeons, instructors, etc.; making the total infantry force 11,320 officers and 328,890 men; 93 regiments of cavalry, with 2,351 officers and 64,162 men, besides 848 officers and men detailed for special cavalry service; 42 regiments of field artillery, with 2,014 officers and 40,928 men, besides 613 officers and men in special services; 14 regiments and 3 battalions of foot artillery, with 728 officers and 17,287, besides 97 men, including officers, on special service; 19 battalions of pioneers and 2 regiments of railroad troops, including 1 balloon detachment, 1 railroad battalion, and 2 railroad companies, numbering in all 564 officers and 12,233 men, besides 98 engaged in special services; 18 battalions and 1 company of train, numbering 257 officers and 6,056 men, besides 63 on special service; special formations having 382 officers and 1,006 men; and 2,121 non-regimental officers, with whom 228 men were detailed. This makes a total of 19,737 officers and 472,509 men. The number of field guns was 1,538. The number of horses was 62,469 for the cavalry, 22,443 for the field artillery, 3,360 for the train, and 30 for the fortress artillery, or 88,302 altogether. Under the law creating two new army corps the peace effective was during the same year increased to 20,285 officers and 486,983 men, including 58,369 non-commissioned officers, and the number of horses to 93,650. Each army corps consists of 2 divisions of infantry, to each of which are attached 1 regiment of cavalry, 1 section or 3 batteries, each of 6 pieces, of mounted artillery, and 1 or 2 companies of pioneers; 1 cavalry division of 4 regiments, with 2 batteries of horse artillery; the corps artillery consisting usually of 12 mounted batteries; and 1 or 2 battalions of pioneers and 1 battalion of train. The line battalion, which consists ordinarily in peace of 544 men, is raised to 1,002 men in war. The war strength of the German army is roughly estimated at 36,000 officers, and 2,357,500 soldiers who have received military instruction, exclusive of the Landsturm. This sum is arrived at by deducting 10 per cent. from the recruiting lists of the active army and its reserve, 20 per cent. from those of the first ban of the Landwehr, and 30 per cent. from those of the second ban, making the active army and reserves 1,062,000 men and the Landwehr 605,500 in the first and 690,000 in the second ban. A report to

the intelligence department of the British army in 1888 gives the following estimate of the strength and distribution of the entire army when mobilized for war, exclusive of surgeons and other non-combatants: Active field army, 22,377 officers and 942,408 rank and file, with 2,028 field guns and 280,472 horses; reserves, 9,536 officers and 354,915 rank and file, with 648 guns and 72,963 horses; garrison troops, 16,209 officers and 868,627 rank and file, with 882 field guns and 86,324 horses. The grand total is 48,122 officers, 2,165,950 trained soldiers, 7,602 surgeons, 12,957 other officials, 439,759 horses, 3,558 field guns, and 58,716 other carriages. This does not include the railroad troops and other special services nor the Landsturm. The latter, which is available in case of invasion only, is estimated at 700,000 effective troops.

The German service rifle is a multiple-loader rather than a magazine weapon, and can not be used as a single loader. The charge of five cartridges is contained in a metal case, and the breech block must be worked to bring each cartridge into place. The arrangement of the Prussian cartridge pouch enables the soldier to fire a greater number of rounds to the minute with the new Mauser rifle than with any of the magazine rifles proper, and without the disadvantages of the latter, such as an empty magazine at a critical moment. The soldier carries 150 rounds in his three pouches, and can stow more in his haversack and pockets. Count Waldersee, on resigning his post as chief of the general staff in the beginning of February, 1891, was succeeded by Lieut.-Gen. Count Alfred Schlieffen, who had been since 1889 quartermaster-general of the army.

The Navy.—The effective war navy in 1890 comprised 12 ironclad battle ships, with 145 guns; 15 coast-defense ironclads, carrying 20 guns, inclusive of the "Bremse" and "Brummer," which have deck armor only; 8 frigate cruisers, carrying 116 guns; 10 corvette cruisers, carrying 116 guns; 4 smaller cruisers, carrying 26 guns; 3 gunboats, carrying 12 guns; 7 avisos, carrying 18 guns; 10 school ships, with 72 guns; and 9 vessels for various purposes, carrying 8 guns. The "Kaiser" and "Deutschland," with 10 inches of side armor, armed with eight 23-ton guns; the "König Wilhelm," with 12 inches of armor at the water line; "Friedrich der Grosse" and "Preussen," sister ships with 9 inches of armor; "Sachsen," "Bayern," "Württemberg," and "Baden," having 10-inch plates and eight 19-ton guns each; and the lighter "Oldenburg," carrying 2 more guns, are the principal sea-going armor-clads. The coast-defense gun vessels are all of one type, having 8 inches of armor, a displacement of 1,109 tons, and one 36-ton gun, except one old ironclad relegated to this service, and the "Siegfried," launched in 1889, which has 3,600 tons' displacement and powerful engines, and the deck-protected cruisers mentioned above, both armed with a single 124-ton gun. The deck-armored "Irene" and "Prinzessin Wilhelm," launched in 1887, are fast commerce destroyers of 4,400 tons displacement, having engines of 8,000 horse-power, and armed with fourteen 6-ton guns. Nearly all the vessels of the fleet are provided with torpedo-launching apparatus. The torpedo flotilla

numbers 134 vessels, viz., 1 ship of 2,310 tons, 1 tender, 6 dispatch vessels capable of making from 16 to 21 knots an hour, 5 torpedo gunboats with a speed of 21 or 22 knots, 63 torpedo boats of from 75 to 85 tons that can run from 20 to 22 knots an hour, 49 torpedo boats of 50 tons capable of making 18½ or 19 knots, and 9 small ones.

Agriculture and Industry.—Only 6 per cent. of the soil of Germany is called unproductive. The area devoted to rye in 1890 was 5,801,889 hectares (1 hectare = 2.47 acres); to wheat, 1,956,441; to oats, 3,886,627; to barley, 1,685,000; to potatoes, 2,917,720; to hay, 5,909,337; to vines, 120,935; to hops, 45,797. The produce of beet sugar in 1889 was 944,505 tons. Of wine, 2,021,569 hectolitres were produced in 1890 (1 hectolitre = 22 gallons). The forests cover 34,347,000 acres, about one quarter of the area of the empire. Iron and coal are produced in Westphalia, Rhenish Prussia, Silesia, and Saxony, coal in Alsace-Lorraine, silver in Saxony and the Harz mountains, zinc in Silesia, and copper in the Harz. The quantity of coal raised in 1889 was 67,341,307 tons; of iron ore, 11,001,000 tons; of zinc ore, 709,000 tons; of copper ore, 573,200 tons. The value of the minerals taken out in 1889 was 552,000,000 marks. About 2 per cent. of the population are employed in textile manufactures, and 1½ per cent. in the iron and steel industries. The production of iron in the calendar year 1890 was 4,563,025 tons. The chief seats of the textile industry are Saxony and some of the Prussian provinces for woollens, Alsace-Lorraine, Baden, and Württemberg for cottons, Westphalia and Silesia for linens, and Rhenish Prussia, Alsace, and Baden for silks. Beer is brewed chiefly in Bavaria, Saxony, and Prussia, the product in 1889 being 46,603,000 hectolitres. The quantity of alcoholic spirits distilled was 2,727,000 hectolitres. The growth of national wealth is illustrated by the classified income-tax lists, which show that the number of persons in Prussia paying taxes on incomes of from 48,000 to 5,000,000 marks increased from 67 to 2,348 between 1869 and 1890, and that those possessing incomes ranging from 32,400 to 48,000 marks increased from 241 to 2,152. These figures indicate that the accumulated wealth is becoming massed in few hands, and this conclusion is confirmed by the fact that 23,221,983 persons paid no income tax in 1890, showing a progressive impoverishment of the middle classes, especially the artisans and small manufacturers.

Commerce.—The general commerce in 1889 had a total value of 5,671,240 marks for imports and 4,811,600 marks for exports. The value of the special imports was 4,087,060 marks, and that of the special exports was 3,256,421 marks. The direct transit trade amounted to 1,280,955,000 marks. The values, in marks, of the special imports and exports of the various classes of merchandise in 1889 are given in the accompanying table.

The values of the chief imports were: Wool, 279,744,000 marks; cotton, 270,744,000 marks; coffee, 199,282,000 marks; raw silk, 129,231,000 marks; rye, 113,444,000 marks; woollen yarn, 112,629,000 marks; barley, 91,454,000 marks; raw hides, 89,486,000 marks; petroleum, 81,337,000 marks; horses, 78,616,000 marks; wheat, 75,389,000 marks. The exports of greatest value

MERCHANDISE.	Imports.	Exports.
Animals.....	183,493,000	81,904,000
Animal products.....	95,828,000	19,773,000
Articles of consumption.....	1,045,926,000	869,293,000
Caoutchouc, etc., and manufactures.....	34,544,000	26,667,000
Chemicals, drugs, etc.....	267,451,000	250,203,000
Fats and oils.....	238,063,000	25,764,000
Fuel.....	95,029,000	116,737,000
Hardware, etc.....	28,339,000	85,081,000
Leather, and manufactures of.....	183,955,000	237,175,000
Literature, art, etc.....	24,779,000	79,097,000
Machinery, instruments, etc.....	66,240,000	156,694,000
Metals and metal goods.....	255,562,000	432,713,000
Paper manufactures.....	18,841,000	89,057,000
Seeds and plants.....	36,647,000	21,437,000
Stone, clay, and glass goods.....	59,150,000	102,703,000
Textile materials and manufactures.....	1,211,168,000	1,034,333,000
Wood manufactures.....	217,520,000	116,831,000
Various articles.....	.....	1,834,000
Total.....	4,087,060,000	3,256,421,000

were: Sugar, 162,842,000 marks; mixed silk and cotton goods, 157,926,000 marks; woollen goods, 152,854,000 marks; ribbons and trimmings, 121,930,000 marks; leather goods, 117,379,000 marks; coal, 110,410,000 marks; hosiery, 108,518,000 marks; cotton cloth, 53,971,000 marks; paper, 53,358,000 marks; wood manufactures, 52,144,000 marks; aniline dyes, 38,144,000 marks; hops, 23,022,000 marks. The imports of the precious metals were 71,988,000 marks in 1889 and the exports were 89,766,000 marks.

The receipts from customs in the year ending March 31, 1888, were 270,368,000 marks, equal to 7.7 per cent. of the total value of the imports. Since the adoption of the protective tariff in 1879 the external commerce of Germany has grown from 5,806,108,000 marks in 1880 to 7,343,481,000 marks in 1889, an increase of 26.4 per cent. The imports have increased from 2,859,928,000 to 4,087,060,000 marks, an increase of 42.9 per cent., and the exports from 2,946,180,000 to 3,256,421,000 marks, an increase of 10.5 per cent. In 1880 Austria-Hungary furnished 14.3 per cent. of the imports, Great Britain and her colonies 12.3 per cent., Russia 11.8 per cent., France 8.7 per cent., Belgium and Holland each 6.8 per cent., the United States 6.2 per cent., and Switzerland 5 per cent. In 1889 the imports from Great Britain and British colonies constituted 16.5 per cent. of the total, 13.4 per cent. came from Russia, 13.1 per cent. from Austria-Hungary, 8.2 per cent. from Belgium, 7.7 per cent. from the United States, 7 per cent. from the Netherlands, 6.9 per cent. from France, and 4.4 per cent. from Switzerland. Of the total exports, 15 per cent. in 1880 and 20 per cent. in 1889 went to Great Britain, 10 per cent. in the former and 10.5 per cent. in the latter year to Austria-Hungary, 6.1 per cent. in 1880 and 12.1 per cent. in 1889 to the United States, 7.7 per cent. in 1880 and 7.9 per cent. in 1889 to the Netherlands, 9.9 per cent. in 1880 and 6.4 per cent. in 1889 to France, 7.7 per cent. in 1880 and 6 per cent. in 1889 to Russia, 6 per cent. in 1880 and 5.4 per cent. in 1889 to Switzerland, and 5.6 per cent. in 1880 and 4.2 per cent. in 1889 to Belgium. During the protectionist era the manufactures of Germany have developed wonderfully, and the population has rapidly increased, notwithstanding the large emigration; while the domestic production of food and raw

materials has not been materially augmented, the fields, the mines, and the forests having nearly reached their full productive capacity in 1879. For this reason and because of the increase of wealth and spread of luxury the exports have not kept pace with the imports, and since 1888 the export movement has been checked, especially in the iron and steel branches, because the increased prices of bread, meat, and liquors, owing to new protective measures for the benefit of agriculture, were enhanced, driving workmen into strikes; and the iron industry could no longer compete in important branches with that of Great Britain because the coal-miners' strike and the increased consumption of coal for domestic heating had raised the price of fuel. In 1890 the exports to the United States were about 8 per cent. greater in value than in the preceding year. Of the German exports of hosiery in that year 60 per cent. went to the United States; of linen manufactures, 39 per cent.; of silk manufactures, 42 per cent.; of cotton manufactures, 22 per cent.; of wool manufactures, 14 per cent.; of porcelain, 40 per cent.; of glass, 18 per cent.; of chemicals and colors, 10 per cent.; of fancy articles, 33 per cent.; of wines, 34 per cent.; of gloves, 57 per cent. Of the imports of raw cotton, 50 per cent. came from the United States; of grain, 11 per cent.; of Indian corn, 65 per cent.; of beef, 23 per cent.; of leaf tobacco, 23 per cent.; of lard, 83 per cent.; of petroleum, 85 per cent. The effect of the new American tariff law was seen in 1891 in diminished exports from Germany to the United States of sugar and of woollens, cutlery, and many other manufactures.

Navigation.—The number of vessels entered inward in 1889 was 67,457, of 12,905,445 tons, of which 57,161, of 11,822,040 tons, were with cargoes, and 10,296, of 1,083,405 tons, in ballast. The number cleared outward was 67,391, of 12,963,502 tons, of which 48,740, of 8,843,750 tons, were with cargoes and 18,651, of 4,119,752 tons, in ballast. Of the total number entered with cargoes, 38,223, of 5,747,460 tons, were German ships; 5,356, of 3,657,590 tons, were British; 4,966, of 607,842 tons, were Danish; 2,954, of 579,952 tons, were Swedish; 1,177, of 389,271 tons, were Norwegian; and the remaining 2,150 belonged to other countries.

The merchant marine in the beginning of 1890 consisted of 815 steamers, of 617,911 tons, and 2,779 sailing vessels, of 702,810 tons, a total of 3,594 vessels, of 1,320,724 tons, of which 1,245, of 329,722 tons, belonged to Baltic ports, and 2,349, of 990,999 tons, to the North Sea ports. The number of sailors was 37,857. Of the sailing vessels 1,564 and of the steamers 165 were under 100 tons; 788 sailing vessels and 211 steamers were between 100 and 500 tons; 236 sailing vessels and 196 steamers were between 500 and 1,000 tons; and 191 sailing vessels and 243 steamers were over 1,000 tons. These figures do not include the vessels engaged in the coasting trade and inland navigation, which numbered 20,390 in 1888, and measured about 2,150,000 tons.

Railroads.—The length of state railroads and private railroads under state management in 1890 was 36,787 kilometres, and the length of private railroads under separate management was 4,889 kilometres, making in all 41,176 kilo-

metres, of which 12,539 kilometres had two or more tracks. The cost of construction was 9,775,901,446 marks, equal to an average of about \$96,000 a mile. The capital cost to the present owners was 10,259,014,576 marks. The number of passengers carried during the fiscal year 1899-'00 was 343,804,927, and the amount of freight transported was 212,093,339 tons. The receipts from passengers were 333,894,172 marks, and from freight 873,241,311 marks. Including other receipts, exclusive of interest on mortgages, the total was 1,264,656,117 marks. The total expenses, exclusive of those for extensions and interest, were 683,117,000 marks, which was 54.02 per cent. of the gross receipts. The net receipts, after deducting all expenses, represent 5.88 per cent. of the original cost and 5.6 per cent. of the invested capital. The number of persons employed was 815,729, whose salaries and wages averaged \$270, and consumed 28½ per cent. of the gross receipts. The above statistics do not include the narrow-gauge railroads, which had a length of 872 kilometres, and returned a profit of 3.28 per cent. on the invested capital.

The Post-Office and Telegraphs.—The number of letters carried by the imperial and the Bavarian and Württemberg post-offices in 1889 was 1,014,659,330; of post cards, 323,083,840; of printed inclosures, 365,130,680; of samples, 23,880,490; of newspapers, 760,973,438; the amount of money sent, 22,241,469,704 marks. The number of employés was 120,629 in the postal and telegraph services, of which the receipts were 241,527,621 marks and expenses 209,855,998 marks. The length of telegraph lines was 98,391 kilometres, with 334,083 kilometres of wire. The number of private messages was 16,705,959, and of official 1,277,291 in the internal service, and in the international 3,255,344 were sent, 3,638,736 received, and 970,506 forwarded in transit.

The Reichstag.—In the session that ended on May 9 the measure that was most discussed was the act for the protection of workmen, framed in accordance with the recommendations of the Berlin Conference of 1890. The act to amend the trade laws, as it was called, was under the consideration of the Reichstag for a full year, and was passed on the closing day of the session, when the Parliament was not prorogued, but was simply adjourned, after the precedent established in 1890, in order that certain committees might continue their unfinished work. The act goes into force on April 1, 1892. Masters are bound by its provisions to grant their workmen absolute rest for twenty-four hours on Sundays, and for forty-eight hours on Church festivals like Christmas, Easter, and Whitsuntide, though in certain occupations work may be permitted for five hours on Sundays and the second day of the religious feasts. Communes may limit or forbid labor on certain days. Exceptions to the prohibition of Sunday work are made in favor of persons employed in public places of amusement, in hotels, and on railroads. The Federal Council is empowered to fix a maximum working day in such trades and occupations as seem harmful to persons employed by reason of overwork, and other safeguards are created for the protection of the lives and health of workers. The laws treating of journeymen and apprentices are

amended to admit of an action on their part for wrongful dismissal, as well as an action against them for breach of contract. The section dealing with juvenile labor provides that no child under thirteen years of age may be employed in any workshop or factory, nor any child above that age if his parents have failed to keep him in school for the period required by the law of obligatory education. Employers are obliged to grant juvenile laborers intervals of rest, and make other special provisions for their health and welfare. The part relating to women employed in factories makes eleven hours a maximum day's work for them, interdicts night work for women, and extends the period of compulsory rest for mothers after confinement from three to six weeks, or four weeks if they bring a medical certificate. The penalties for violations of the trade laws have been heightened, and the powers of the factory inspectors enlarged.

The next most important measure was the sugar-tax bill, which was passed on the closing day, after long debates and many changes of votes, by a majority of 150 to 126. It provides for the gradual diminution of the export bounties from Aug. 1, 1892, until they cease entirely in 1897, and also abolishes the existing duty of 80 pfennigs per double centner on raw beets, while increasing the excise duty on sugar from 12 to 18 marks per double centner. One of the chief legislative acts of the session was the bill ratifying the new railroad conventions that had been concluded with much labor with Austria and Hungary. The revision of the commercial treaties with the neighboring countries could not be proceeded with until the freight tariffs and other traffic arrangements were settled.

Liquor Legislation.—The Emperor became sponsor for a project of law intended to check the spread of intemperance, that was similar in its provisions to one that was proposed ten years before, but which failed to survive the criticism to which it was subjected before passing the committee stage. The proposed new law was published in the "Reichsanzeiger," on Aug. 27, 1891, and evoked a flood of adverse criticism from the Progressists, Socialists, and other upholders of personal liberty, and the silent resistance of classes whose interests were menaced. When the bill was laid before the Bundesrath, the governments of one or two of the great south German states offered objections. Under the existing trade law the governments of the Federal states retain the full right to grant or withhold licenses. The new measure declares that licenses shall be granted only where need is shown for a retail liquor shop. The bill does not deal with the sale of beer or wine, but only of strong spirits. No person can have a license, unless he is of approved respectability, and can not be suspected of allowing his place to be used for immorality or gambling. Retailers of liquors to be carried away are forbidden to sell a less quantity than half a litre, and in towns of over 5,000 inhabitants persons licensed as retailers of liquor are not permitted to carry on any other business or to store liquor with other merchandise. Keepers of saloons must serve his customers with eatables, or with non-spirituous liquors, if they are called for; they must keep strict order in their places, and prevent anything that

may lead to the abuse of alcohol; they are forbidden to serve liquor to minors under sixteen years of age, or to any person who is intoxicated, or to one who has within three years been punished as a confirmed drunkard; they must see that drunken persons who enter their premises are conducted to their homes, or are handed over to the charge of the police; they are forbidden to sell liquor on credit, except with meals, and no debt incurred in contravention of this provision can be collected with the aid of the law. The matter of employing female waiters is left to be dealt with by the governments of the individual states. The selling of liquor before eight o'clock in the morning may be prohibited by police regulations.

Habitual drunkards, and all persons who through addiction to drink are unable to manage their affairs with prudence, or are likely to endanger the safety of others, or threaten to bring their families to want, may be placed under guardians, and the guardian may, with consent of the court, place his ward in an asylum for inebriates, or in default of such action the court may intervene and order the drunkard's commitment to an asylum. For violations of the provisions of the law fines of from 30 to 60 marks may be imposed, as well as imprisonment up to fourteen days. Persons who become intoxicated while engaged in work connected with saving life, preventing fires, and the like, or who undertake such work while intoxicated, may be fined 100 marks and imprisoned for four weeks. The same paragraph applies to persons employed in caring for the health of others, such as physicians and nurses. It was stated, to prove the need of the measure, that 4.64 litres of distilled liquor *per capita* were consumed in Germany in 1889-'90, in addition to 6.44 litres of wine and 90 litres of beer; that cases of chronic alcoholism and delirium tremens increased between 1877 and 1885 from 4,272 to 10,300; that cases of alcoholism had so increased as to form 20 per cent. of the cases treated in public hospitals, and caused a rapidly increasing percentage of insanity; that 19 per cent. of the prisoners in the penitentiaries were habitual drunkards; that 63 per cent. of the homicides were committed by drinkers, and from 40 to 68 per cent. of other crimes.

The Prussian Landtag.—The new Prussian ministry presented a comprehensive scheme of legislation to the Diet, which began its session on Nov. 21, 1890, and was closed on June 20, 1891. A new income-tax law, passed in 1890 and going into operation in 1892, forms part of a scheme of tax reform elaborated by Dr. Miguel, which aims, in the words of the royal message, to achieve "a just distribution of public burdens according to the ability to bear them." The proposed reforms were too sweeping to secure the adhesion of a majority of the Deputies, who refused to pass the bill placing a tax on inheritances and modified the income-tax measure materially, voting only the correlative tax on trades and industries with slight alterations. Under the new provisions relating to the income tax, the communal magistrate first makes a list of all persons having taxable incomes, and states the amounts as nearly as he can; then a board of assessors, of which he is chairman, consisting of persons elected by the townspeople and a minor-

ity appointed by the Minister of Finance, revises the list, which goes next to a district board constituted in the same way, the majority being elected for six years and the others nominated by the Government, which compares the provisional assessment with the declarations of the individual tax payers, and makes the final assessment. The declarations are given on official blanks, which the tax payer must fill out, stating the amount of his income from invested capital, real estate (including the rental value of his residence when owned by him), commerce or industry, or his profession or other occupation, with his debts or other offsets. The assessed person may appeal to a tax court containing a majority chosen by a committee of the provincial legislature and a nominated minority, and from the decision of this court an appeal lies to the Superior Administrative Court. For untruthful declarations of income, heavy legal penalties are exacted. All persons concerned in the assessment are sworn to secrecy. Under the old law, declarations were not required from tax payers. On incomes below 80,000 marks the Landtag agreed to the rates proposed by the minister. On incomes of 50,000 marks, instead of the old rate of 3 per cent., it made the tax $3\frac{1}{2}$ per cent., and the maximum tax, payable on all incomes of 100,000 marks and over, was raised to 4 per cent. Under the old law under-assessment was the rule, tax payers usually escaping with a tax of about 2 per cent. Local taxes are partly based on the national income tax, the tax payer being required to pay usually an equal tax, but often double, and in the industrial cities of Westphalia and the Rhine province three times the amount, into the town treasury. The measure therefore goes far to readjust the incidence of taxation to the relief of the poorer classes. The changes in the tax system thus introduced are intended to pave the way to the eventual abandonment of the national land tax to the local governments. Another Government bill was intended to prepare the way, by administrative measures, for the abolition of pocket boroughs in the seven old provinces, where the land is mainly owned by the aristocracy. This bill for the regulation of communes makes an inroad on feudal privileges, and was passed in spite of the obstructive opposition of the Conservative factions. It releases the agricultural communes of the eastern parts of Prussia from the absolute control which the nobles, as communal magistrates, have hitherto exercised over the peasantry on their estates. A bill for the reform of primary education was opposed by Liberals and Conservatives for opposite reasons, and had no chance of passing.

One of the chief grievances growing out of the old *Kulturkampf* was cleared away by the bill restoring to the Roman Catholic dioceses, with interest, the revenues that were sequestered for coercive purposes during the long conflict over the May laws. The Government was opposed by the Free Conservatives, headed by Herr Stöcker, and the National Liberals, the parties that have been its staunchest adherents, while the Radicals and the Clericals and Poles, who have often combined to attack the Government in former times, supported the measure. A year before Herr von Gossler had attempted to compromise the matter by offering to the bishops

the interest only, and in granting the full amount Chancellor von Caprivi was able to show some equivalent in the withdrawal of certain Clerical demands regarding the primary schools. The bill was presented by Herr von Gossler, Dr. Falk's successor in the Ministry of Public Worship, who had carried through all Prince Bismarck's measures of reconciliation, and was willing to make this last stage of the journey to Canossa in order to put an end to a dispute of which all parties were tired. The question of revoking the proscription of the Redemptorists was broached, and was referred to a committee, but no prospects were held out of the return of the banished Jesuits. The derision with which the bill was at first received convinced the veteran minister that he had lost the prestige that would overcome the opposition, and therefore he resigned on March 11, and was succeeded by Count Zedlitz-Trütschler. The retirement of Herr von Maybach from the Ministry of Public Works, which he gave up on June 22 to Herr Thielen, left Herr von Boetticher the sole remaining representative of the ministry of the Bismarck régime that served the old Emperor. Among the minor enactments of the Diet was a game-preservation act that leaves the sufferers from noxious animals protected to provide aristocratic sport the poor consolation of dividing the damage among themselves. The disaffected Junkers were solaced further by a reactionary law on land rents that bears the mark of feudal tenure in reviving inconvertible estates.

Prince Bismarck.—The ex-Chancellor, whose opinions were echoed by two powerful newspapers that were reputed to be his personal organs, the "Hamburger Nachrichten" and the "Münchener Allgemeine Zeitung," expressed freely his disapproval of the policy of his successor in many things, condemning the assault on the influential position of the landed aristocracy, criticising the concessions to England in East Africa, objecting to the proposed commercial arrangements with Austria, and denouncing the hostility to Russia that the Emperor was supposed to entertain. Kaiser Wilhelm, in unmistakable language, threatened the founder of the German Empire with the consequences of his displeasure if he persisted in his hostile attitude. When a vacancy occurred in the Hanoverian constituency of Geestemünde, the National Liberals persuaded Prince Bismarck to accept the nomination in order to declare his opinions in the Reichstag, as he had declared his intention of doing if the course of political events seemed to require his return to public life. The election, which took place on April 15, was a disappointment to Bismarck's admirers, for he failed to secure an absolute majority. He received 7,557 votes, while his Socialist rival, a cigar-maker named Schalfeld, received 3,928, the Guelph candidate 3,843, and the Radical candidate 2,619. Not many more than half the registered voters went to the polls, a much smaller than in 1890, when the National Liberal candidate was elected at the first ballot. A more decisive victory was expected for the chief personality in German politics, although he took no steps to win voters by appearing among them, or even writing an address. In the test ballot a fortnight later he obtained the absolute majority required, be-

cause the Guelphs would not unite with the Socialists and Freisinnige, to defeat him, but even then his vote fell 2,000 short of that cast for his National Liberal predecessor.

Kaiser Wilhelm.—The dread of military aggression and martial ambition that the young Emperor aroused by dismissing Prince Bismarck and directly intervening in politics was in a great measure dispelled by his subsequent pacific utterances, and by his turning his attention mainly to domestic matters. The "new era" that was signalized by his choosing such counselors as Dr. Miquel, and engaging the co-operation of parties and classes that Bismarck had excluded from participation in the direction of affairs, reassured and satisfied the country. The official manifestations in acts and proclamations of his ideas of personal government gave little offense, even to those who condemned the objects that he inaugurated or sought to further, for the royal initiative is approved by the greater part of the Prussian people, and they like a king who gives his whole attention to matters of state. His Labor Conference, his active furtherance of colonial enterprises, his intervention in the miners' strike, his initiation of temperance legislation, and edicts against vice and luxury were in conformity with Hohenzollern traditions and the Prussian Constitution. His unofficial utterances at mess dinners and in private intercourse revealed autocratic conceptions that were strange and disquieting, and though they were toned down when reported in the Government organs, the actual words were the subject of free comments in the German press. When he was reported to have said, "It is the nature of the monarchy that there is only one master in the country, and it is I," the words were declared to be not authenticated, but it was not denied that they were spoken. A reputed statement that the peace of Europe lay in his hand was officially declared to have been simply an expression of the wish that it did. "*Hoc voto, sic jubeo*," he is said to have inscribed on a photograph of himself when presenting it to Minister von Gossler, and on visiting Munich he is alleged to have written in the visitors' book of the municipality, "*Suprema lex regis voluntas*," a principle foreign to the present constitutions both of Bavaria and of Prussia. His description of Napoleon I as a "Corsican *parvenu*," in addressing a convivial assembly of officers in a province once devastated by the armies of the great Corsican, gave such apparent offense in France that it was altered in the official version. The interpretation that he gave to the soldier's oath in addressing a regiment, to the effect that the soldier should feel that he belonged "body and soul" to the Kaiser, awakened among the German people a more genuine indignation. When a workman who refused at a public dinner to rise and drink the Kaiser's health was tried for lese-majesty, his acquittal by a Prussian court delighted the liberty-loving section of the people.

Besides his advocacy of the bill for the suppression of drunkenness, the most significant public act was a rescript published in the "*Reichsanzeiger*" on Oct. 27. The murder by a couple named Heinze of a night watchman, following a succession of startling crimes com-

mitted by the vicious class in Berlin, caused him to telegraph an imperative order to the Minister of Justice to purge the city of such ruffians and to issue this proclamation, which was not countersigned by any minister. In it he said that he felt the responsibility for the decision that would be taken in the existing state of affairs because it would be given in his name, and he was the sovereign defender of law and order. Degraded men who profit by female prostitution were a menace to Berlin and other cities, and he called on the police and the courts to punish every offense with the utmost rigor of the law, and suggested that the penalties should be made more severe, that lawyers who hinder the course of justice by frivolous and technical devices should be disciplined, and that in trials for immorality the public should be excluded from the court room.

International Relations.—The triple alliance, originally a secret treaty between Germany and Austria, made in 1879, in which Italy joined, was renewed in 1885 for six years more, and in the summer of 1891 the league was continued for six years more. The accession of England for certain purposes, that is—of the present Tory Government in England—was revealed in a speech of the Italian Premier on June 29, when he said that Italy and Great Britain had agreed some years before to co-operate for the maintenance of the *status quo* in the Mediterranean. The visit of the Emperor Wilhelm in England in July, 1891, was regarded as a confirmation of this understanding. The relations with France were disturbed by the more stringent execution of the passport regulations in the earlier part of the year, but the relaxation of the regulations on account of the railroad disaster stopping communications between France and Switzerland repaired the mistake, and this source of constant friction between the two countries was in a great measure removed by the new regulations by which passports viséed by the German minister in Paris would only be required after Oct. 1, 1891, from persons under forty-five years of age who have opted for French nationality and from military officers, though foreigners sojourning in Alsace-Lorraine are required to report themselves to the local police.

A commercial alliance that was a result of the tariff war between France and Italy and a response to the new protective duties of France was concluded at Munich in October between Germany, Austria-Hungary, and Italy, and was joined by Switzerland. The new treaty with Austria, which goes into effect in February, 1892, provides for a reduction in the duties on rye and wheat. The short crop of grain in Germany, as well as in other parts of Europe, excited fears that the dearth of bread already felt by the poorer classes in Germany would reach the point of actual famine. The Radicals and the Socialists in the Reichstag, by picturing this danger, sought to compel Chancellor von Caprivi to consent to a relaxation or suspension of the grain duties. He was pledged to the agricultural class, and declared that they would be maintained till the following February. The scarcity of grain was so great that the Government decided to mix Indian meal with rye in the bread prepared for the army. After the ukase forbidding the exportation of rye from Russia, the

opinion of Gen. von Caprivi prevailed over that of Dr. Miquel in a Cabinet council at which it was decided to retain the duty on wheat. On Sept. 3 the German Government raised the embargo on American pork that had been maintained since 1881, ostensibly as a veterinary precaution, but in reality as a protectionist measure. It was declared that the new law of inspection passed by the American Congress was sufficient to remove the danger to the German people from the consumption of diseased American pork. An agreement to abolish the restriction and also to admit American agricultural produce on the same terms as Russian farm produce was signed by the German Representative at Washington in August.

Socialist Congress.—The assembling of a party convention of the Social Democrats was preceded by a serious contest between the section headed by Wildberger and Werner and the Parliamentary leaders, Bebel, Liebknecht, and Vollmar, who maintained their influence over the bulk of the party, from which the extremist faction seceded. The Congress met at Erfurt and separated on Oct. 21, after adopting a new party programme, of which the following are the principle features:

1. Universal suffrage, without distinction of sex, for all subjects of the Empire over twenty years of age; direct election by the people by secret ballot, the principle of "one man one vote," and biennial parliaments.
2. The direct participation of the people in legislation, with the right to initiate or reject laws, and the annual revision of the scale of taxation.
3. A wide extension of the principle of local government, and the election of all public officials by the people, to whom such officials are to be held responsible.
4. The training of the people in arms, so as to form a national defence to take the place of a standing army.
5. The decision of peace or war to rest with the elected representatives of the people; international disputes to be decided by arbitration.
6. The repeal of all laws prohibiting or restricting free expression of opinion, or the right of association or of public meeting.
7. Religion to be a matter of private opinion, and all payment of public funds for confessional or religious objects to cease; ecclesiastical or religious communities to be considered private associations, which manage their own affairs.
8. The secularization of the national schools, attendance at which is to be compulsory for every one; free education, free books, and free dinners for children attending the public schools, as well as for those pupils of either sex who, by their general capacity, are considered fit to pursue their studies at the higher educational establishments.
9. Free administration of justice and free legal advice; judges to be elected by the people.
10. The abolition of capital punishment, the establishment of criminal courts of appeal, and the payment of compensation to persons unjustly accused, arrested, or condemned.
11. Free medical assistance, including attendance at childbirth, free medicine, and free disposal of the dead.
12. A graduated income and property tax to defray the public expenditure, so far as it is to be met by taxation; the obligation of self-assessment; the succession duty to be fixed on a sliding scale, according to the amount of the inheritance and the degree of relationship between the legatee and the testator.
13. The abolition of indirect taxation and duties, and of such politico-economic measures as subordi-

nate the general weal to the interests of a privileged minority.

14. An efficient national and international legislation for the protection of the working classes, the taking over by the state of all workmen's insurance agencies, the workmen to be given an adequate share in their administration.

15. An unbroken period of rest of at least thirty-six hours in each week for every working man.

Colonies.—The colonial empire, acquired since 1884, has a total area of 933,150 square miles, with a population estimated at 5,500,000. The German possessions in Africa are Togoland, Cameroons, Damaraland, and Namaqualand, and German East Africa, having an aggregate area of 833,000 square miles and 5,110,000 inhabitants. In the Pacific Ocean were occupied in 1885 and the following year Kaiser Wilhelm's Land, the Bismarck Archipelago, and the Solomon and Marshall groups, having a combined area of 100,150 square miles and about 390,000 inhabitants.

Togoland, with Little Popo and Porto Seguro, covers about 16,000 square miles on the Slave Coast of Guinea, and contains 500,000 inhabitants. The forest products of caoutchouc and dye woods are not utilized, and the only commerce yet developed is in ivory and palm oil. The Imperial Commissioner maintains order by means of a small native police force. The receipts from customs in 1890 were 91,270 marks. Cameroons has an extent of about 130,000 square miles and a population of 2,600,000. The number of white residents in 1890 was 105, of whom 65 were Germans. Numerous factories trade in ivory and palm oil, and the Deutsche Plantagen-Gesellschaft raises tobacco and cacao. The customs receipts in 1890 were 200,526 marks. The Governor is assisted by a chancellor and two secretaries. The post was filled in 1890 by Baron von Soden. Count Pfeil acted as judicial officer. (For details of Southwest Africa see under CAPE COLONY). The German estimate of the territories in East Africa is 370,000 square miles. For six months ending in February, 1890 the imports amounted to 1,996,221 marks, which was nearly three times as much as for the corresponding period of the preceding year, and the exports were valued at 2,050,552 marks, an increase of about one third. Gen. von Soden's staff of officers were actively engaged in 1891 in extending German authority in the interior toward the northeast, while Lieut. Morgen undertook an expedition to the sources of the Binue and Dr. Zintgraff attempted to establish a base of operations in the Bali country in the direction of Adamawa. Dr. Zintgraff's expedition established friendly relations with the Balis, with whom he made an alliance to punish the Bafutis, who had murdered his messengers. With 5,000 Bali warriors and his own force of 500 natives he captured and burned the chief town of the Bafutis on Jan. 31, 1891. On the next day he was attacked by 10,000 men, and after a desperate fight his army was defeated, the Balis losing 500 men and the German expedition 500, including Lieut. von Spangenburg, the military commander, and two other Germans who represented the trading company. An expedition was sent out to avenge this repulse, which met with disaster likewise, all the white leaders being killed and the remnant of their followers scattered. The

tribes on the banks of the river Abo tendered their allegiance early in 1891. Later they renewed hostilities, attacking Herr Leist, who was sent to arrange the terms of peace. To punish them it was necessary to fit out a strong expedition, which was placed under the command of Capt. Baron von Gravenreuth. In October he led a landing party from the "Habicht" and "Hyaene," which captured Miang. Advancing three days' march from the coast, the expedition laid siege to the village of Buka, which was stormed on the third day. In the assault Capt. von Gravenreuth and three black soldiers were killed.

The New Guinea Company was wound up in the autumn of 1891, the reason being that Herr Kindt, the director, had chosen a bad situation for the Kaiser Wilhelm plantation, and had provoked the ill will of the natives by harsh treatment. A new association called the Astrolabe Bay Company was organized to carry on the cultivation of tobacco. A colonial council to consider how to promote cotton growing in East Africa and New Guinea, what regulations to apply to the granting of concessions to new companies, how best to employ 1,500,000 marks voted by the Reichstag for the development of Cameroons, and other questions connected with colonial enterprise met in Berlin on June 1, under the presidency of Dr. Kayser, chief of the Colonial Department of the Foreign Office. The council approved the Emperor's project of organizing a lottery for the purpose of raising 2,500,000 or 3,000,000 marks to carry out Capt. Wissmann's plans for establishing German influence on the African lakes, and thus combating slavery. This scheme the Prussian Diet refused to sanction.

GREAT BRITAIN AND IRELAND, a monarchy in western Europe. The legislative power is vested exclusively in Parliament, and, according to constitutional precedent, matters of political importance are decided by the vote of the elective branch. The number of hereditary peers in 1890 was 551, including 12 minors. The House of Commons consists of 670 members, who are elected by secret ballot. Unless dissolved by royal writ, a Parliament lasts seven years. The average duration since the accession of Victoria has been four and a half years. The executive power is exercised to all practical intents by the committee of ministers called the Cabinet, and these are selected by the leader of the party having the majority in the House of Commons, who is summoned on the advice of a retiring premier who is no longer able to command the majority necessary to carry on the Queen's government, and requested by the sovereign to form a Cabinet, in which he usually takes the office of First Lord of the Treasury, though the present Prime Minister is Foreign Secretary.

The reigning sovereign is Victoria, Queen of Great Britain and Ireland and Empress of India, daughter of Edward, Duke of Kent, the fourth son of George III. She was born on May 24, 1819, and succeeded her uncle, William IV, on June 20, 1837. The heir-apparent is Albert-Edward, Prince of Wales, born Nov. 9, 1840, who married Alexandra, the eldest daughter of King Christian IX of Denmark, who has borne

him five children: Albert Victor,* Duke of Clarence, born Jan. 8, 1864; George, born June 3, 1865; Louise, born Feb. 20, 1867, married to the Duke of Fife in July, 1889; Alexandra, born in 1868; and Maud, born in 1869.

The Cabinet in the beginning of 1891 was made up of the following members: Prime Minister and Secretary of State for Foreign Affairs, the Marquis of Salisbury, born in 1830, who became Prime Minister on Aug. 3, 1886, and on Jan. 14, 1887, exchanged the post of First Lord of the Treasury for that of Foreign Secretary; Lord High Chancellor, Lord Halsbury, formerly Sir Hardinge S. Giffard; Lord President of the Council, Viscount Cranbrook, formerly Gathorne Hardy; Chancellor of the Exchequer, George Joachim Goschen, appointed Jan. 14, 1887; Secretary of State for the Home Department, Henry Matthews; Secretary of State for War, Edward Stanhope, appointed Jan. 14, 1887; First Lord of the Treasury, W. H. Smith, who was Secretary for War when the Cabinet was first constituted, transferred when the Cabinet was reconstructed on Jan. 14, 1887; Secretary of State for the Colonies, Lord Knutsford, who received his present appointment on Jan. 14, 1887, having before the change been Vice-President of the Council; Secretary of State for India, Viscount Cross, formerly Sir Richard Cross; First Lord of the Admiralty, Lord George Hamilton; Lord Chancellor of Ireland, Lord Ashbourne, formerly Edward Gibson; Chief Secretary to the Lord Lieutenant of Ireland, Arthur J. Balfour, who entered the Cabinet when Secretary of State for Scotland on Nov. 19, 1886, and succeeded Sir Michael Hicks-Beach in the present post on March 5, 1887; Chancellor of the Duchy of Lancaster, the Duke of Rutland, formerly Lord John Manners; President of the Board of Trade, Sir Michael Hicks-Beach, who resigned the Irish Secretaryship on March 5, 1887, retaining a seat in the Cabinet without a portfolio, and retired in January, 1888, and was subsequently appointed to his present office as successor to Lord Stanley of Preston; Lord Privy Seal, Earl Cadogan, admitted to the Cabinet on April 19, 1887; President of the Local Government Board, Charles Thomas Ritchie, admitted to a seat in the Cabinet on April 19, 1887; President of the Board of Agriculture, Henry Chaplin, appointed on the creation of the office, Sept. 5, 1889.

Area and Population.—The area of the United Kingdom is 121,481 square miles, England having 50,823 square miles, Wales 7,363, Scotland 30,417, Ireland 32,583, the Isle of Man 220, and the Channel Islands 75. The population of England and Wales, as determined by the census taken on April 5, 1891, is 29,001,018, showing an increase of 3,026,572, or 11·65 per cent. since the last decennial census. The population was 703,357 less than the estimate of the Registrar-General, the rate of increase having been less than in any previous decennial. The number of males is 14,050,340 and of females 14,950,542, giving an excess of 900,202 females, or 106·4 to every 100 males, the proportion having steadily increased since 1851. The inhabited

* The death of Prince Albert Victor in January, 1892, makes his younger brother, who holds a commission in the navy, the next heir to the throne after his father.

houses increased in the last ten years 621,283, or 12.9 per cent., the total number being 5,452,802, giving an average of 5.32 occupants to each house, against 5.38 in 1881. The uninhabited houses declined from 46,414 to 38,407. The number of families is 6,146,900, showing an increase of 513,708, or 9.1 per cent., which is considerably below the rate of increase of population, making the average number of individuals in a family 4.7, against 4.6 in 1881. The population increased at the highest rate in the counties surrounding London and the mining counties, and at the next highest in manufacturing districts and counties, while in the rural counties the increase was much smaller or there was an actual decrease.

There are 62 towns in England and Wales with more than 50,000 inhabitants. London is returned at 4,211,056, against 3,815,544 ten years ago, showing an increase of 10.4 per cent. Liverpool comes next with the only decrease, from 552,508 to 517,116. Manchester is returned at 505,343; Birmingham, 420,171; Leeds, 367,506; Sheffield, 324,243; Bristol, 221,665; Bradford, 216,361; Nottingham, 211,984; West Ham, 204,902; Kingston-upon-Hull, 199,998; Salford, 198,136; Newcastle-on-Tyne, 186,345; Portsmouth, 159,255; Leicester, 142,051; Oldham, 131,463; Sunderland, 130,921; Cardiff, 128,849; Blackburn, 120,064; Brighton, 115,402; Preston, 107,573; Croydon, 102,697; Norwich, 100,964; Birkenhead, 99,184; Huddersfield, 95,422; Derby, 94,146; Swansea, 90,423; Ystradyfodwg, 88,350; Burnley, 87,058; Gateshead, 85,709; Plymouth, 84,179; Halifax, 82,864; Wolverhampton, 82,620; South Shields, 78,431; Middlesbrough, 75,516; Walsall, 71,791; Rochdale, 71,458; Tottenham, 71,336; St. Helen's, 71,288; Stockport, 70,253; Aston Manor, 68,639; York, 66,984; Southampton, 65,325; Leyton, 63,106; Willesden, 61,266; Northampton, 61,016; Reading, 60,054; West Bromwich, 59,489; Merthyr Tydvil, 58,080; Ipswich, 57,260; Bury, 57,206; Wigan, 55,013; Hanley, 54,846; Devonport, 54,736; Newport (Mon.), 54,695; Warrington, 52,742; Coventry, 52,720; Hastings, 52,340; Grimsby, 51,876; Bath, 51,843; and Barrow-in-Furness, 51,712. The growth of London was much less than in the preceding decade, the improved traveling facilities having encouraged people to go beyond the registration district to reside. The population of the outer ring, which embraces 370,924 acres, while the inner London or registration district, covers 77,410 acres, increased from 950,178 to 1,435,457, or nearly 50 per cent., making the population of greater London 5,656,909, against 4,766,661 in 1881. The day census of the city of London made the number of employers and employed 301,381, against 261,061 in 1881, while 1,121,708 persons entered the city during twenty-four hours, against 797,563 in 1881. The most remarkable growth was seen in Tottenham, 95 per cent. in ten years, in Willesden 121.9 per cent., and Leyton, 133.5. The increase in the population of Manchester in the ten years was 164,995; the growth of Nottingham was 13,328, or only 14 per cent., as compared with 115 per cent. in the previous decade; that of Cardiff was 47,522, or 57 per cent.; that of Birmingham was 29,162; Leeds, 59,980; Sheffield, 40,796; Newcastle, 42,143; Hull, 30,027; Bradford, 27,906; Portsmouth, 32,139; Leicester, 20,205; Salford,

22,482; Oldham, 20,667; Blackburn, 16,482; Huddersfield, 13,815; Derby, 13,328; Birkenhead, 15,591; Bristol, 15,175; Norwich, 13,474. The decrease in Liverpool is only apparent, people having abandoned the restricted municipal area to seek cheaper residence sites outside the registration district.

The census returns for Scotland make the total population 4,033,103. The increase was 297,530, which was at a lower rate than in any previous decade, only 7.96 per cent., with the exception of 1861-'71, since 1801. In the ten years before it was 375,000. There was an increase of 12.63 per cent. in the principal cities, 20.51 per cent. in the large towns, and 6.26 per cent. in the small towns, while in the rural districts of the mainland the population decreased 0.55 per cent. and on the islands 3.41 per cent. Glasgow within the municipal limits has a population of 565,714, showing an increase of 10.62 per cent.; but with inclusion of the suburbs the city has over 700,000 inhabitants, the increase having been at the rate of 30 per cent. Edinburgh's growth was at the rate of 11.46 per cent., the population numbering 261,261. Dundee had 155,640 inhabitants, an increase of 9.26 per cent.; Aberdeen, 121,905, an increase of 16.02 per cent.; Greenock, 63,498, a decrease of 4.97 per cent.; Leith, 69,696, an increase of 14.55 per cent.; Paisley, 66,427, an increase of 19.39 per cent. The population of Scotland is divided into 1,951,461 males and 2,081,642 females, the former having increased in the decade at the rate of 8.45 per cent. and the latter at the rate of 7.52 per cent. There were 814,444 inhabited and 51,714 vacant houses, against 739,005 and 59,697 in 1881.

The total population of Ireland, according to the preliminary returns, was 4,706,162 persons, of whom 2,317,076 were males and 2,389,086 females. This shows a decrease of 9.10 per cent., the highest rate since the famine period, when there was a falling off between 1841 and 1851 of nearly 30 per cent., the population having previously grown steadily from 5,395,456 in 1801 to 8,175,124 in 1841. In the decade 1851-'61 the decline was 8.10 per cent.; in 1861-'71, 6.83; in 1871-'81, 4.40. In the female population the decline during the last decade was 9.6, and in the male population 8.5 per cent. In Munster the decrease was 12.2 per cent.; in Connaught, 11.9 per cent.; in Leinster, 6.5 per cent.; and in Ulster, 7.2 per cent. The only counties showing an increase are Dublin, 2.4 per cent., and Antrim, 1.4 per cent. During the decade the natural increase of the population of Ireland, or surplus of births over deaths, has been 267,653, while the total emigration has been 768,105. Unlike Great Britain, Ireland has no objection to a religious census. The returns show that 3,549,745 persons, or 75.4 per cent. of the population, are Roman Catholics; 600,830, or 12.8 per cent., Protestant Episcopalians; 446,687, or 9.5 per cent., Presbyterians; 55,235, or 1.2 per cent., Methodists; and 53,665, or 1.1 per cent., belong to other persuasions, including 1,798 Jews and 1,702 who refused to give information. During the ten years the Roman Catholics have decreased 10.4 per cent., the Episcopalians 6.4 per cent., and the Presbyterians 5.1 per cent., while the Methodists have increased 13.1 per cent., and the Jews 280.9 per cent. In Ulster the Protestants

outnumber the Catholics by 100,000, the majority being found mainly in the counties of Antrim and Down. The number of uninhabited houses was 45,717, showing an increase of 12·8 per cent. The population of Dublin city increased from 249,602 in 1881 to 254,709 in 1891, or 2 per cent.; including the suburbs the increase was from 339,161 to 352,090. Belfast increased in population from 208,122 to 255,896, or 23 per cent.; Cork decreased 6·3 per cent., or from 80,124 to 75,070; Limerick decreased from 38,562 to 37,072, or 3·9 per cent.; Londonderry increased from 29,162 to 32,893, or 12·8 per cent.; and Waterford decreased from 22,457 to 21,693, or 3·4 per cent.

The total population of the United Kingdom as enumerated on April 5, 1891, was 37,740,283. The English population constitutes now 72·8 per cent. of the whole, the Welsh 4 per cent., the Scotch 10·7 per cent., and the Irish 12·5. The relative growth of the English element is seen by comparing the census of 1821 when 54 per cent. of the population lived in England, 3·4 per cent. in Wales, 10 per cent. in Scotland, and 32·6 per cent. in Ireland. The population of the Isle of Man, which was recently on the decline, is advancing again in numbers, and the same is true of the Channel Islands, their population being 147,870, compared with 141,260 in 1881.

The number of marriages in England and Wales in 1889 was 213,696; of births, 885,179; of deaths, 517,968. Though 3·8 per cent. more male infants are born annually, there are no more males than females among children of the age of ten, and in the adult population there are only 949 men to every 1,000 women. The number of marriages in Scotland for 1889 was 26,318; of births, 122,770; of deaths, 73,203. In Ireland the number of marriages was 21,478; of births, 107,782; of deaths, 82,986. The proportion of illegitimate births was 4·6 per cent. of the total births in England and Wales, 7·9 per cent. in Scotland, and 2·8 per cent. in Ireland.

The number of emigrants, natives and foreigners, who left the United Kingdom in 1890 was 316,145, of whom 233,571 were bound for the United States, 31,930 for British America, 21,604 for Australasia, and 29,040 for other destinations. In 1889 the total number of emigrants was 342,641, of whom 163,518 were natives of England and Wales, 25,354 of Scotland, and 64,923 of Ireland. There were 147,398 immigrants in 1889, making the net emigration 195,243. Of the immigrants, 103,070 were of British and Irish origin, which deducted from the total emigration of 253,795 British subjects leaves an excess of 150,725 emigrants of British nationality.

During the ten years, ending with 1890, 3,552,953 persons have emigrated from the United Kingdom, of whom 1,571,856 were English, 278,671 Scotch, 735,555 Irish, and 966,870 foreigners. In 1891 the emigration was much less than in the preceding year, the net emigration of persons of British and Irish origin being almost stationary, although there was a larger movement of foreign emigrants passing through England on the way to America.

The Army.—The number of troops and the cost of maintaining each branch of the service must be exhibited in the army estimates, submitted for the sanction of Parliament each year.

The estimates voted in 1890 provide for an army composed of 7,475 commissioned officers, 999 warrant officers, 15,958 sergeants, 3,670 musicians, and 125,381 private soldiers, with 14,432 horses. This does not include the British army in England and includes only the staff of the militia and other auxiliary forces. The regular troops maintained in the United Kingdom in 1890 consisted of 12,470 cavalry, 17,584 artillery, 5,370 engineers, and 68,682 infantry and special bodies, having altogether 13,101 horses and 282 field guns. Inclusive of the troops in India, the total strength of the regular army in the beginning of 1890 was 210,218 officers and men, of which number 73,387 were in England, 3,752 in Scotland, 26,977 in Ireland, 4,135 in Egypt, 27,147 in the colonies, 72,999 in India, and 1,821 on passage. Of the rank and file as returned in January, 1890, there were 151,311 born in England and Wales, 16,538 in Scotland, 28,720 in Ireland, 4,924 in the colonies and India, and 355 of foreign or unknown nativity. The number of men of all ranks enrolled in the various forces in 1890 was 696,048, and the number reported as effective was 618,967, classified as follows: Regular troops at home and in the colonies, 137,054; first class of the army reserve, 54,239; second class of the army reserve, 1,926; militia, 117,309; yeomanry cavalry, 10,789; volunteers, 24,029; Indian establishments, 73,629. Great Britain and Ireland are divided into 14 military districts, which are subdivided into 102 regimental districts for infantry, each under a colonel, who commands in addition the militia forces, as do the colonels placed over the 12 artillery and 2 cavalry districts. Each line regiment consists of 2 battalions, of which one usually is serving abroad while the other is stationed at home. The army in India is recruited from the pick of the troops, who are commonly enlisted at an immature age, eighteen or under, whereas the 10,000 or more men drafted to India every year must be of good physique and not under twenty years old. The lack of discipline which was exhibited by one of the battalions of the Grenadier Guards in acts of insubordination that caused the temporary of the battalion to Bermuda in 1890 came to the surface again when another battalion of the same regiment, on April 20, 1891, refused to turn out for parade, alleging that their officers subjected them to excessive drills in order to gain leisure for travel and luxurious amusements. The same spirit of discontent was manifested at the time of the visit of the German Emperor in July by the young soldiers of another crack regiment, the Foot or Coldstream Guards, who attempted to mutiny on account of the severe work that was required of them. The critics of the army published many complaints in 1891 of the failures in discipline and efficiency of the short-service soldiers, and of the weapons with which the troops were provided, alleging that the artillery were trained with old 12-pounders, and that the modern field guns that had been adopted had not yet been furnished, and that the infantry had been armed with a hastily accepted magazine rifle that was constantly failing and was inferior to the types adopted by other nations. The magazine rifle was made the subject of a debate in Parliament on Feb. 3, when the Cabinet was sustained by a majority of 34.

The principal objection to the service rifle is that it has the weak bolt action that has been discarded by the German and other governments, instead of locking with a breech block that offers a solid resistance to the recoil. The Lee-Speed rifle is said to shoot no faster than the Martini, while its cost is twice as great and is more than that of the German, the Austrian, or the French rifle, and it is also said that, unlike these, it has a main spring and striker that are very liable to be broken and certain to become fouled, because the soldier can not get at them to clean them. Another objection is that no suitable ammunition has yet been devised.

The Navy.—There were 38 armored vessels and 177 unarmored steam vessels in commission on Nov. 1, 1890, and in addition to these the navy had 27 sailing vessels and 32 stationary vessels. During the preceding twelve months 7 new first-class ironclads had gone into commission, while 3 of the second class had been laid off. The programme of construction approved by Parliament is to be carried out by 1894, when there will be 30 first-class battle ships instead of 17, as at present, and the 15 of the second class will be increased by 2; 11 new protected cruisers, of 7,650 tons each, will be built; the 10 cruisers of the second class will be increased to 51; and to the existing 18 of the third class 6 will be added. The programme includes also a torpedo ship of 6,620 tons, 2 new sloop gunboats, 31 torpedo gunboats, of which 4 are now completed, 9 more unarmored gunboats, of which there are now 63, and an addition of 6 to the 80 first-class, and of 10 to the 51 second-class torpedo boats that the Government has at present. The 7 vessels that are being built for the Australian squadron do not form a part of the scheme. There were in progress at the close of 1890 5 first-class battle ships, 2 first-class, 3 second-class, and 6 third-class protected cruisers, 1 torpedo depot-ship, 7 torpedo gunboats, 2 sloops, and 9 first-class gunboats. Of the vessels now on the effective list 29 will be removed as obsolete before April, 1894. The naval estimates for 1890-'91 provide for 43,449 officers and seamen, 6,244 boys, 13,882 marines, 4,200 men of the coast guard, and 1,025 officers for various services. There were 14 flag officers and 2,687 commissioned officers in active service. Provision was made also for 21,159 navy reserves, 2,510 pensioner reserves, and 2,000 artillery volunteers.

The last of the vessels embraced in the old programme, the first-class cruiser "Blenheim," was delivered by the builders before the end of 1891. Of the 17 second-class cruisers contracted for, 8 had been launched before the beginning of 1891, the "Lafona," built at Portsmouth, had been delivered, and all were expected to be completed before April, 1892; the 5 first-class cruisers were expected to be launched within a year; 3 of the 4 first-class battle ships were in an advanced stage; and the 6 torpedo gun-vessels, completing the ship-building allotted to private builders under the Naval Defense act, had not yet been contracted for. The 5 cruisers and 2 torpedo gunboats for the Australian flotilla were then nearly completed. Of 38 ships to be built in the royal dockyards, 4 first-class battle ships were nearly ready to be launched, the 2 second-

class ships were begun, 1 first-class cruiser had been launched and 2 others were nearly ready, 5 second-class cruisers had been launched, and 2 torpedo gunboats were nearly ready for service. Of the 540 guns required for the 70 new ships, 240 had been completed, but of these only 27 were heavy guns, of which 2 were the 16½-inch 30-caliber 110-ton guns that have been condemned as useless by naval experts, because the 67-ton 13½-inch gun can pierce the heaviest armor yet made and because the great guns on the "Benbow" and "Victoria" had proved unmanageable. The "Royal Sovereign," begun in 1889 and launched at Portsmouth on Feb. 26, 1891, is the largest man-of-war ever built in England, having a displacement of 14,150 tons, a length of 380 feet and 75 feet breadth of beam. The 7 barbette ships of this class and the turret ship which will complete the list of the first-class battle ships ordered under the Naval Defense act will all be armed with 67-ton guns, four in number, distributed in pairs in two protected stations, and all capable of being fired on each broadside. The auxiliary armament is mounted on two decks. The belt of 18-inch armor, 8½ feet broad, extends over two thirds the length of the ship, and is completed by armored bulkheads, a steel deck and protective under-water deck, and 18 inches of armor on the barbette. The disposition of the armament is generally the same as in the "Trafalgar" and the "Nile." There will be 10 6-inch quick-firing guns, 16 6-pounder, and 9 3-pounder quick-firers, 8 machine guns, and 2 field guns. The "Royal Sovereign" is designed for a speed of 16 knots at natural draught and a coal endurance of 5,000 miles. The "Royal Arthur," launched from the Portsmouth dockyard in the same month as the "Royal Sovereign," is one of the 9 first-class protected cruisers of the improved "Mersey" type, measuring 360 feet in length and 60 feet 8 inches in beam, with a displacement of 7,700 tons. She will be able to steam 19½ knots under forced draught and 18½ knots with natural draught, and can carry coal for a cruise of 10,000 knots at a speed of 10 knots. The steel turtle-back deck is 5 inches thick in the most exposed parts, and the guns are protected by 6-inch screens and casemates. She will carry 1 9½-inch gun, 12 6-inch quick-firing guns, 12 quick-firing 6-pounders, 5 3-pounders, 6 machine guns, and 2 9-pounders, besides 4 torpedo tubes and a complement of 18 torpedoes. The "Endymion," of the same class, built by contract at Hull, was launched on July 22. She will be armed with 2 9½-inch breech-loaders and with nearly the same equipment of smaller guns and the same torpedo apparatus as the "Royal Arthur"; and is designed for a speed of 20 knots when running at full power. The naval manoeuvres of 1891 showed little besides the efficacy of the system of mobilization and the efficiency and vigilance of the officers and discipline and smartness of the crews. A vigorous offensive as a means of frustrating torpedo attacks was adjudged to have been entirely successful. Another feature of the manoeuvres was the successful test of the 110-ton guns with which the "Sans Pareil" had been provided after years of delay.

Finances.—For the year ending March 31, 1890, the total revenue of the Government was

£89,804,316, exceeding the budget estimate by £3,154,316, and the actual expenditure was £86,083,314, which was £116,487 more than was estimated in the budget. For the year ending March 31, 1891, the revenue was estimated at £90,406,000 and the expenditure at £86,627,000. Nearly five sixths of the revenue in 1889-'90 was derived from taxation, customs producing the net sum of £20,455,563, excise £24,133,252, stamps £13,041,692, the land tax £1,046,359, the house duty £1,977,644, and the income and property tax £12,783,900, making in all £73,483,390. The net revenue from the post-office was £9,467,165, from telegraphs £2,307,444, from Crown lands £507,319, interest on Suez Canal shares held by the Government £279,155, and departmental and other receipts £3,416,663. Of the receipts from customs, £9,214,629 were raised from tobacco imports, £4,490,694 from tea, £2,217,172 from rum, £1,331,539 from brandy, £1,133,301 from other spirits, £1,303,695 from wine, and the remainder from currants, coffee, raisins, and other articles. Of the excise receipts, £14,800,687 came from spirits, £9,598,955 from beer, and the rest from railways, license fees, and other minor sources. Of the receipts from stamps the probate duty yielded £4,603,490, the legacy duty £2,738,334, deeds £2,794,539, receipts £1,084,826, the succession duty £1,099,406, and the estate duty, bills of exchange, patent medicines, license fees, marine insurance, and other sources smaller sums. Of the total expenditure the charges on the consolidated fund, mainly for the public debt, consumed £28,289,524, the army and navy £31,203,152, and the civil service £26,590,638, which includes the cost of collecting the revenue. The interest and sinking fund of the debt amounted to £25,000,000; the cost of the army was £17,345,811, and of the navy £13,842,241; the grants for civil services were £15,589,990; the cost of collecting the customs and inland revenue was £2,654,891; the appropriations for the post-office were £5,463,205, for the telegraph service £2,176,000, for the packet service £664,000. Comparing the revenue returns of 1890 with those of 1857, we find the income from customs 15 per cent. less, the excise revenue $37\frac{1}{2}$ per cent. greater, the proceeds of stamp taxes nearly double, the produce of the land and house taxes about the same, the income tax receipts a little more, and the total revenue greater by $16\frac{3}{4}$ per cent. The income tax was 5*d.* in the pound in 1884; a penny was added in 1885 and 2*d.* more in 1886; it was 8*d.* for two years, then a penny was taken off in 1888, and another penny in 1889, and in 1890 the 6*d.* rate was retained, or $2\frac{1}{2}$ per cent. of land and house rents, profits, interest, and dividends assessed, the amount of which in 1889 was £645,158,689, having increased to that figure from £465,478,688 in 1871. A comparison of the expenditures of 1890 with those of 1857 shows that over 50 per cent. more is now spent on the army and navy, the expenses of the debt are $13\frac{1}{2}$ per cent. less, the net expenses of the civil services nearly 30 per cent. greater, and special expenses much less.

The revenue for 1890-'91 exceeded the estimates by over £1,800,000, and though relief of distress in Ireland, the increase of the wages of post-office employes, and supplementary votes to the amount of £500,000 threatened to reduce the surplus to little more than £500,000, savings in

departmental expenses enabled Mr. Goschen to show a balance of about £1,250,000 at the end of the year. The increased receipts for tobacco, the unabated "rush to alcohol," which yielded £900,000 of the surplus, besides the new duties that do not go into the imperial treasury, and the increased consumption of tea, which reduced the loss to the treasury from taking off 2*d.* a pound from the duty from the expected £1,500,000 to little more than £1,000,000, were among the signs of industrial prosperity. The debt was reduced by £7,616,000, notwithstanding an increase in the unfunded debt of £4,138,000, including the defense loans and £800,000 for the Australian squadron. Since Mr. Goschen came into office the capital of the debt has been reduced by £31,000,000 and £2,000,000 a year have been saved to the tax payer by the reductions in the annual debt charge. For the year 1891-'92 Mr. Goschen calculated on a total expenditure of £88,444,000. The new requirements were not for the army and navy, as in the previous year, but for the relief of distress and development of the material resources of Ireland, higher wages in the post-office and other departments, new buildings, educational improvements, and the census. The sixpenny income tax is retained, and a more rigorous assessment and collection enables the Chancellor of the Exchequer to reckon on obtaining £2,300,000 for every penny in the pound, or £300,000 more than when he came into office. The £2,000,000 that a penny of income tax then represented was four times what it produced when the tax was first imposed by Sir Robert Peel, and every increase in the amount collected tends to keep it at the present rate, in spite of the clamor of the property-owning and capitalist classes for a reduction. The estimate of revenue for 1891-'92 was £90,430,000, leaving an estimated surplus of £1,986,000. The Government project for freeing education was expected to cost £2,000,000, but not more than one half as much for the first year, as the act would not go into force before September, 1891. Of the remainder of the surplus £500,000 were to be expended in constructing barracks and the rest in carrying out the promised withdrawal of the light gold coinage.

The national debt on March 31, 1890, amounted to £689,944,026. Deducting assets and balances, the net total was £679,733,889. During the war of the American Revolution the debt was nearly doubled, amounting when peace was declared to £243,063,145. The French war of 1792 and the war with Napoleon increased the capital to £861,039,049. During the next forty years £91,956,500 were paid off, and then £39,026,173 were added on account of the Crimean War, making the capital £808,108,722 in 1857, which has since been decreased by £118,164,696. Since 1880 it has been reduced from £774,044,235 to £689,944,026, which is not much more than the annual value of property and profits assessed to the income tax, and is less than half of the national income. Divided by the number of the present population, it represents a debt of \$88.50 *per capita*, the annual interest and reduction charges being about \$3.40 *per capita*.

Production and Industry.—The area devoted to grain crops in Great Britain in 1890 was 8,033,133 acres; to green crops, 3,297,528 acres; to clover and grass, 4,808,819 acres; to perma-

ment pasture, 16,017,492 acres; to hops, 54,555 acres; to flax, 2,455 acres; fallow, 508,119 acres. In Ireland the area of grain crops was 1,514,607 acres; green crops, 1,214,396 acres; flax, 96,871 acres; clover, grass, and pasture, 12,304,265 acres; fallow, 15,538 acres. The area under wheat in Great Britain was 2,386,336 acres, and in Ireland 188,711 acres. The number of horses in Great Britain was 1,432,620; of cattle, 6,508,632; of sheep, 27,272,459; of pigs, 2,773,609. In Ireland the number of horses was 523,384; of cattle, 4,240,753; of sheep, 4,323,805; of pigs, 1,570,279. The sea fisheries gave employment to about 125,000 men, of whom 52,000 are Scotch, 47,000 English, and 26,000 Irish. The value of the fish and shell fish caught in 1889 was £5,993,881, exclusive of salmon, of which the catch in Ireland was estimated at £334,000, and in Scotland at £240,000.

The quantity of coal raised in the United Kingdom in 1889 was 176,916,724 tons, valued at £56,175,426. The quantity of iron ore was 14,546,105 tons, valued at £3,848,268, containing 5,181,733 tons of iron, of the value of £12,695,246. The tin, lead, zinc, silver, copper, and other metals brings the total product from British ores up to £14,346,846, and counting, besides coal, the product of the quarries, salt mines, gypsum, arsenic, etc., and of metallic ores, the value of the mineral produce was £73,476,000. The number of persons employed in the coal mines was 563,735. Coal was exported in 1889 to France, Italy, Germany, Russia, Sweden, Denmark, Spain, and Egypt of the total value of £14,781,990, the quantity being 28,956,445 tons. The consumption of pig iron in 1889 was 7,692,230 tons. The imports of raw cotton in 1889 were 1,937,462,240 pounds, of which 277,602,304 pounds were re-exported. The imports of wool were 700,903,057 pounds, of which 363,647,360 pounds were re-exported; the imports from Australia amounted to 431,303,391 pounds. There were 2,538 factories in 1890 manufacturing cotton, 1,793 making woolen goods, 125 for shoddy, 753 for worsted, 375 for flax, 105 for hemp, 116 for jute, 42 for hair, 24 for cocoa-nut fiber, 623 for silk, 403 for lace, 257 for hosiery, and 54 for elastic, making in all 7,190 factories, with 53,641,062 spindles and 822,489 power looms, employing 428,082 males and 656,549 females, including 40,558 male and 45,941 female children working half time, being under thirteen years of age. The capital employed in the textile industries is about £200,000,000, and the number of persons dependent on them is at least 5,000,000. Textile products constitute more than half of the total exports.

Commerce.—The value of the foreign commerce of the United Kingdom in 1890 was £748,776,286, against £743,230,274 in 1889 and £686,213,284 in 1888. The merchandise imports amounted to £420,885,695, against £427,637,595 in 1888 and £387,635,743 in 1887; the exports of British products were £263,542,500, having risen in steady progression from £212,725,200 in 1886; the exports of foreign and colonial produce were £64,348,091 in value. The average share of every man, woman, and child in the total trade was £19 11s. 9d., and in the exports of British produce, £6 17s. 10d. The share of England and Wales in the total trade was 90½ per cent.,

that of Scotland 8 per cent., and Ireland 1½ per cent. The imports of gold in 1890 amounted to £23,568,049, and the exports to £14,306,688; the imports of silver to £10,890,384, and the exports to £10,385,650. Among the merchandise imports in 1890, articles of food and drink free of duty figure for £136,422,110, and those paying duty for £26,216,864; textile materials for £85,239,289; metals for £23,710,901; and other raw materials for £41,626,155; chemicals and colors for £8,190,389; oils for £6,991,653; tobacco for £3,542,949; live animals for £11,216,333; manufactured products for £63,218,167; and miscellaneous articles for £14,510,885.

The imports of grain and flour were valued at £53,044,507: raw cotton, £42,756,575; wool, £26,945,057; dead meat, £20,622,824; sugar, £18,260,884; timber and wood, £17,126,983; butter and margarine, £13,682,579; silk manufactures, £11,818,991; animals, £11,216,333; wool manufactures, £11,178,182; flax, hemp, and jute, £10,723,912; tea, £9,998,353. The quantity of wheat imported in 1890 was 96,758,688 bushels, of which 31,022,440 bushels came from Russia, 27,521,696 bushels from the United States, 21,276,200 bushels from British possessions, and the rest from Roumania, Germany, and other countries. This does not include the flour imports, equal to 25,237,336 bushels, of which the share of the United States was 19,241,280 bushels. The exports of cotton goods in 1890 were £62,079,355, and of cotton yarn £12,351,960; those of woolen manufactures, £20,421,847, and of woolen yarn, £4,088,654; linen goods, £5,715,984; jute manufactures, £2,665,653; apparel, £5,035,679; iron and steel manufactures, £31,582,172; hardware and cutlery, £2,765,840; copper, £4,555,514; machinery, £16,413,424; coal and coke, £19,019,989; chemicals, £8,948,391.

Navigation.—The steamers engaged in the foreign trade in 1889 numbered 3,484, of 4,257,156 tons, employing 117,391 men. There were 260 steamers, of 118,407 tons, employing 4,092 men, engaged partly in the foreign and partly in the home trade, and 1,841, of 289,245 tons, employing 21,015 men, that were engaged in the home trade alone, which extends to the neighboring coasts from the mouth of the Elbe to Brest. The number of sailing vessels in the foreign trade was 2,484, of 2,338,289 tons, employing 46,595 men; the number engaged both in the home and the foreign trade was 500, of 66,619 tons, employing 2,856 men; and the number engaged in the home trade alone was 8,985, of 571,438 tons, employing 38,314 men. The total number of vessels registered was 21,779, of 7,759,008 tons, comprising 14,640 sailing vessels, of 3,041,278 tons, and 7,139 steamers, of 4,717,730 tons. There were built and first registered during the year 277 sailing vessels, of 117,481 tons, and 582 steamers, of 554,024 tons. The number of vessels that were entered at British ports in 1889 was 62,052, of 35,524,000 tons, of which all were British except 23,375, of 9,578,000 tons. The total number cleared was 62,920, of 36,365,000 tons, of which 23,875, of 9,841,000 tons were foreign. The foreign tonnage entered and cleared was 19,420,241 tons, of which 4,737,211 tons were Norwegian vessels, 3,956,315 were German, 1,920,296 Dutch, 1,867,569 French, 1,760,130 Danish, 1,491,681 Swedish, 1,208,198 Spanish, 792,394 Bel-

gian, 513,119 Russian, 456,180 Italian, and 325,610 American. The tonnage of vessels that were entered with cargoes in 1889 was 28,517,000, and the tonnage cleared with cargoes was 33,048,000. The number of vessels entered coastwise was 319,031, of 47,524,354 tons, and the number cleared was 286,407, of 42,031,729 tons.

Railroads.—The length of the British railroads in the beginning of 1890 was 19,943 miles, of which 14,034 miles were in England and Wales, 3,118 miles in Scotland, and 2,791 miles in Ireland. The capital in paid-up shares and loans was £876,595,166. The number of passengers carried in 1889 was 775,183,073. The receipts from passengers were £32,630,724; from freight, £41,086,333; the total receipts, including miscellaneous, £77,025,017; and the working expenses were £40,094,116, which was 52 per cent. of the gross receipts and 4·21 per cent. on the paid-up capital, which was £43,955 per mile.

The Post-office and Telegraphs.—The number of letters delivered in the fiscal year 1890 was 1,650,000,000, the proportion in the several divisions of the United Kingdom being 48 per head of the population in England and Wales, 34 in Scotland, and 21 in Ireland, and the average for the whole kingdom 43 to each individual. The number of post cards delivered was 217,000,000, an increase of 7·8 per cent.; the number of book packets was 441,900,000, an increase of 7·3 per cent.; the number of parcels was 42,800,000, an increase of 8·2 per cent.; the number of newspapers was 159,300,000, an increase of 4·9 per cent. There were 10,374,144 money orders issued, including foreign and colonial, transmitting £27,165,905; of postal orders, the number was 44,712,548, of the aggregate amount of £17,737,802. Of the inland money orders, 9,027,750 in number, having a total value of £23,333,417, the share of England was 7,395,352, of the value of £19,548,374; that of Scotland was £1,068,457, issued for £2,501,572; and that of Ireland was 563,941, representing £1,283,471. The gross revenue of the post-office for the year ending March 31, 1890, was £9,847,778, and the working expenses £6,603,217, exclusive of the telegraph service, which yielded a gross revenue of £2,363,836 and a net revenue, after deducting working expenses, of £101,526. The number of messages in 1890 was 52,436,779 in England and Wales, 6,545,654 in Scotland, and 3,420,966 in Ireland, or 63,403,399 for the whole United Kingdom. On March 31, 1890, the telegraph lines had a total length of 31,440 miles, with 190,027 miles of wires, excluding the wires of railroad companies, but including 17,211 miles of private wires. The post-office has 28 telephone exchanges in various towns, and 46 miles of pneumatic tubes in London.

The Parliamentary Session.—The sixth session of the twelfth Parliament of Queen Victoria and the twenty-fourth of the United Kingdom was opened on Nov. 25, 1890. In the speech from the throne the failure of the potato crop in the western counties of Ireland was mentioned as requiring Government measures to mitigate the immediate evil and diminish the probability of its return. It was ascribed to the economic and industrial conditions under which the people live; and to increase contentment and diminish political disturbance in Ireland, a bill for

augmenting the number of owners engaged in the actual cultivation of the land was placed at the head of the measures to be laid before Parliament. The next was a proposal to remedy the difficulties arising from the indirect incidence of the tithe rent-charge in Wales and England. A measure to facilitate the transaction in Scotland and Ireland of the more important stages of private legislation was placed next, and after that the attention of Parliament would be called to the expediency of alleviating the burden which the law of compulsory education imposes on the poorer classes. "If time remained for the consideration of other measures, bills would be introduced to reform the system of county government in Ireland, assimilating it to the recent acts for Great Britain; to establish district councils; to extend the facilities for purchasing small parcels of land in Great Britain; to amend the law with respect to the compensation payable by employers for injuries to persons in their employment; to amend the laws relating to public health; for the appointment of a public trustee; and for increasing the security of friendly societies and savings banks.

Parliament was called together in November, nearly three months before the usual time, on an understanding that the session should not be prolonged beyond the end of July. Irish obstruction, which has hitherto borne the blame for the barrenness of Parliament and the protraction of its sessions till late autumn, had nothing to do with the shortcomings of the session of 1891. The rupture of the Irish party enabled the ministers to carry the address in a single evening and to have the tithe bill and the Irish land-purchase bill read a second time and their discussion in committee begun, as well as to pass two minor measures for Irish relief, before the House adjourned for the Christmas holidays. The Irish party was so engrossed with its internal feuds that it took little part in the business of Parliament. The section that adhered to Mr. Gladstone did not oppose the land-purchase bill, because it offered real benefits to the peasantry, and its affiliations with the Catholic priesthood deterred it from joining the English Radicals in their opposition to the temporizing free-education bill. After reassembling on Jan. 22 and making a good start by passing the tithe bill at the third reading, and sending it up to the House of Lords, the House dallied over the supplementary estimates and over the factories bill and one or two minor measures. The speech from the throne had given precedence to the tithe bill, the land purchase bill, the Scotch private bill, procedure bill, and the free-education bill. Of these, the tithes bill was disposed of, the land-purchase bill was in committee from Dec. 5, and the Scotch private bills act was referred to a select committee before the adjournment for the Easter holidays on March 26. This committee was not appointed till after the House reassembled, and no details of the education bill were made known till the introduction of the budget on April 23. Several secondary measures mentioned in the Queen's speech, dealing with Irish local government, district councils, small holdings, the appointment of a public trustee, and the liability of employers were dropped, and nothing was heard of them, while others were introduced, and

some of them were passed, legislating for factories and workshops, the public health of London, elections to county councils, the gold coinage, and other matters.

The tithe bill was very different from what the Welsh people desired; but, since it made the owners, instead of the tenant farmers, responsible for the rent-charge and deprived the tithe owner of the remedy of distraint, leaving him to recover by process in the county court, the absurdities of the original bill proposed by the Government two years before were corrected, and it was passed on Feb. 12 by a majority of 250 against 161. The claim of the Welsh people to decide on the uses of the tithes paid by them was not considered, nor was the proposition to commute the tax, so as to bring it into harmony with the altered conditions of agriculture. In the interest of the land owners, who would henceforth have to pay the tithes, C. Gray, a Conservative county member, offered an amendment to remit the tithe rent-charge when in excess of half the annual value, instead of two thirds, as in the bill; but many of the country gentlemen stood by the Government, and the amendment was rejected by a majority of 54. More opposition was manifested in the House of Lords, but the bill passed in almost the original form, and received the royal assent on March 25.

The land-purchase bill, though in point of magnitude and complexity the most important measure of the session, was not as long nor did it present so many points of difficulty as the one presented by Mr. Balfour in 1890, which was in fact divided into two bills, the section relating to the Land Department being embodied in a separate measure, and this was advanced to the committee stage before Christmas. Afterward some of the provisions were incorporated in the land-purchase bill, and the rest were dropped until the working of the act should show whether they should be necessary. A fertile source of discussion and difficulty was avoided by omitting the proposals for new machinery of transfer and adopting that which had worked, on the whole, well under the Ashbourne acts. In other respects the plan was substantially that of 1890. It was based on voluntary agreement between the selling landlord and the purchasing tenant, subject to the approval of the commissioners; the whole sum was to be advanced, the limit of twenty years' purchase being removed; the landlord was to be paid off in $2\frac{1}{2}$ per cent. stock, charged upon the holding as an annuity for forty-nine years at 4 per cent., and thus covering principal and interest. The guarantees for repayment, besides the power of selling the holding, were elaborate, including primarily the exchequer contribution of £40,000 a year to be capitalized as a reserve, the Irish proportion of the probate duty granted when the English local government scheme was adopted, and $\frac{1}{2}$ per cent. set aside out of the purchase annuities by way of insurance. In case of the failure of these guarantees, the state had for further security one fifth of the landlord's purchase money kept back for five years, the difference between the tenant's normal annuity and that of 80 per cent. of the net rental, which he was to pay for a limited time, and, ultimately, the grants for various public purposes in Ireland out of the imperial exchequer. The total ad-

vances were limited, in the first instance, to the capitalized value of the guarantees, immediate and contingent, which may be computed at some £30,000,000, but there were provisions for readvancing a portion of this, under the same limitations, in case no default was made. The portion of the bill dealing with the congested districts supplemented these guarantees in the case of counties requiring special relief by an appropriation of £1,500,000 charged on the capital of the Church fund, while a board was constituted with power to buy and sell lands, to develop local industries, to amalgamate small farms, and to assist emigration. Mr. Morley's amendment proposing to delegate the powers under the act of the county councils yet to be created was rejected by a majority of 77. Mr. Sexton's proposal to reinstate the evicted tenants, the means being supplied from the Irish Church surplus, ousting the tenants now occupying evicted farms, was supported by the pleadings of Sir George Trevelyan and the full Gladstonian vote. The Land Commission was made permanent. The most important change resulting from the discussion was a concession made by Mr. Balfour to Mr. Parnell, by which in the case of holding of less than £50 annual value the Government advance in each county should be in proportion to the number, not the valuation, of such farms. Another amendment granted a right of appeal from the Purchase Commissioners. The bill was read a third time on June 15. The House of Lords added an amendment restricting the limitation of advances in the case of the larger tenants to the first year, assuming that the smaller tenants did not take up their allotted portion; and in respect to a provision giving special privileges to tenants furnishing a part of the purchase money, the rate of annuity was fixed at $3\frac{1}{4}$ instead of $3\frac{1}{2}$ per cent.

The length of the session depended on whether the Government would bring in a free education bill, and this they were unwilling to declare until they were sure of the passage of the land-purchase bill, and could count on a surplus sufficient to meet the extra charges on the treasury. No outline of the proposed measure was forthcoming till after the introduction of the budget on April 23. The bill was explained in detail by Sir William Hart Dyke, Vice-President of the Council, on June 8, when he moved a resolution authorizing a grant of public money to elementary schools in lieu of fees paid by parents. The Radicals have always coupled the demand for free education with the system of popular schools and secular education that prevails in the United States and in nearly all civilized countries. If the Government proposed to abolish fees in the board schools alone, that would have been a long stride in this direction. When the same aid was to be given to the voluntary schools, the advanced section of the Liberal party demanded that it should be made conditional on some form of popular control over those schools. The party, as a whole, was not opposed to the Government scheme, because all religious bodies—the nonconformists and Roman Catholics, as well as the Church of England people—were concerned in defending the equal participation in Government grants that was a vital necessity for the preservation of their de-

nominal schools. Even the Radicals objected merely as a declaration of principle, and were careful not to obstruct a measure that offered such relief to poor parents and was a step toward state education. The measure was not complicated. It dealt with the question of fees only, and leaving the existing system otherwise intact. The management of voluntary schools, the conscience clause, compulsory attendance, and the educational standards were left as they were. The bill simply offered to such schools as chose to accept it a fee grant of ten shillings a head annually, calculated on the average attendance. When the average fees received did not exceed ten shillings a head, every school taking the grant would become free, while those where the fees amounted to more were allowed to charge the excess up to a certain limit. The bill as introduced gave the grant only in the case of children over five and under fourteen, who are compelled by law to attend, under the education act of 1876. At the request of representatives of voluntary schools, the Government consented to extend the limit of age so as to include all children between the ages of three and fifteen. The question of popular control was raised by Mr. Fowler, and after his introduction had been rejected by a majority of 267 against 166, the Gladstonians being deserted by the anti-Parnellites, no serious opposition to the bill was offered. An amendment of Lord Cranborne allows voluntary schools to join in groups, so as to divide the fee-grant among themselves, with provision for grading. The bill was sent to the upper house on July 8, and minor changes made there were afterward attacked by the Opposition when they were submitted for the concurrence of the House of Commons, one of them because it was an inadvertent invasion of the power over the public purse. The grant is equivalent to 3*d.* a week for every child in attendance. If in any district the Education Department is satisfied that sufficient free schooling is provided, the managers of a particular school may impose or retain school pence not to exceed 6*d.* a week for any child of legal school age, 2*d.* for any child under five, nor 3*d.* for one over fourteen years of age.

The Newfoundland bill, which was carried through the upper house in May in spite of the protests of the Opposition, was a coercive measure to empower the officers of the Imperial Government to carry out the *modus vivendi* with France in regard to the Newfoundland fisheries pending the arbitration of the question. The colonial courts had refused to allow the validity of the diplomatic arrangement, and Sir William Whiteway, Prime Minister of Newfoundland, presented arguments for this view before the bar of the House of Lords, but at the same time he promised that the colonial Legislature would pass the measure necessary for the enforcement of the *modus vivendi*. As this pledge was not immediately fulfilled, the Government proceeded with the bill, on which the colonial Legislature yielded, and the bill was withdrawn on May 28, the date set for the second reading. The Bering Sea bill, placing restrictions on the seal fishery pending the arbitration of the matters in dispute between England and the United States, was carried without opposition.

The factory bill was referred to the standing Committee on Trade, and was brought before the House on June 18, when the debate took place on Mr. Buzton's amendment to prohibit the employment of children under the age of eleven, which was one of the recommendations of the Berlin Congress on Labor. The motion was carried against the Government by a majority of 16, and was afterward accepted and made a part of the bill. A proposition to raise the age for full time to fourteen was rejected by a majority of 25, and the bill passed rapidly through the remaining stages. The Home Secretary brought in a bill to empower courts of summary jurisdiction to deal with offenders below the age of sixteen, and to adjudge that the offenders shall be whipped instead of imprisoned, and also to impose fines on the parents or order them to pay compensation to persons injured by the child's offense.

The bill relating to procedure in Scotch private legislation contained provisions to which local objections were raised, and though the Government met these with concessions the bill had to be sacrificed in fulfillment of the promise to talk up no contentious business after the education bill. Sir William Harcourt came near preventing the passing of the bill for the recoinage of light gold pieces by raising a debate on the general monetary system and the gold reserves. A bill for the discipline of the English clergy, worked out by the bench of Bishops in the House of Lords, was dropped, because the Radicals found in it contentious features. One to establish training colleges in Ireland succumbed to the objections of the Ulster Orangemen. The bill for the local registration of land titles in Ireland, an experimental step in the direction of the modern registration systems of Australia and the United States, was carried through by the Attorney-General for Ireland. Other minor measures that survived the "massacre of the innocents" were the London public health bill, the penal-servitude bill, and the bill to facilitate the registration of voters for the election of county councils. The last was urgent because the triennial elections were to come off in November. Sir Joseph Pease's resolution calling on the Government of India to resign the profits of the opium trade and to prohibit the manufacture of the drug, except for medicinal purposes, was carried against the Government by the considerable, if somewhat accidental, majority of 160 votes to 130. Sir William Fowler, in supporting the resolution, even proposed that the British tax-payers should reimburse the deficiency caused by the abolition of the opium receipts, which constitute one tenth of the Indian revenue, and amount to about £6,000,000 a year. John Morley was the only politician of note and responsibility who gave his support to the resolution. Mr. Gladstone's bill for the removal of religious disqualifications, the object of which was to allow a Roman Catholic to be appointed Chancellor in England or Lord Lieutenant of Ireland, and which was sarcastically described as the "Ripon and Russell relief bill," was rejected by 256 against 224. While Charles Bradlaugh lay on his deathbed, the House expunged the resolution passed in 1880 by which he was precluded from either making an affirmation or taking the oath.

Mr. Pritchard-Morgan's resolution in favor of disestablishing the Church in Wales was defeated by the comparatively small majority of 235 against 203. Mr. Stansfeld's resolution in favor of the principle of "one man, one vote" was voted down, while Mr. Howorth's counter-proposal in favor of redistricting the United Kingdom so as to give England equal representation with Ireland in proportion to the population likewise failed to pass. On a proposition introduced by John Ellis approving the reduction of public houses Mr. Fulton's amendment in favor of compensating publicans was adopted by a majority of 71. Earlier in the year the House of Lords had rendered a judicial decision, confirming that of the court below, which was in harmony with the position taken by the Liberals in the debates on the license bill in 1890. The Lord Chancellor and his colleagues decided unanimously that a license is given for one year only, and at the end of the year licensing justices may refuse to renew it in their discretion, as the publican has no vested interest in his license, except from year to year, and no claim can lie for compensation under the provisions of the licensing acts, notwithstanding the practice that the justices have followed of treating a license once granted as a privilege only to be revoked for bad conduct, and the fact that immense sums have been paid for public houses and loaned on mortgage in the belief that the right was permanent.

Foreign Relations.—A partial confirmation of the conditional promise alleged to have been made of British naval support to the Triple Alliance and revealed in a statement of the Italian Premier was given by Sir James Ferguson in the House of Commons, and in the vague and guarded words of the Marquis of Salisbury, in his speech, on July 29, at the Lord Mayor's banquet, when, while disclaiming all knowledge of the terms of the alliance between Germany, Austria, and Italy, and depreciating the importance of written treaties, saying that nations will act together in a great crisis not because they are bound by protocols, but because they are "in unison and cordiality with one another," he defined England's position in these words: "Our allies are all those who wish to maintain territorial distribution as it is without risking the fearful dangers or the terrible arbitrament of war." The most important acts of the year were the treaty for the delimitation of the respective territories and spheres of influence of Great Britain and Portugal in South Africa (see CAPE COLONY AND SOUTH AFRICA) and the agreements to refer to arbitration the lobster and seal fishery disputes with France and the United States. A diplomatic controversy growing out of the permission of the Turkish Government to the transports of the Russian steam volunteer auxiliary fleet to pass through the Dardanelles, led to a singular naval demonstration that the English was unwilling to avow officially. On Sept. 13 a detachment of sailors and marines, with a battery of field pieces and Gatling guns, landed at Sigri, on the island of Mitylene, from one of the ironclads of Admiral Lord Kerr's squadron, and torpedo mines were laid in the harbor. The operation was accompanied by a semblance of torpedo drill and sham manœu-

vres of torpedo boats, and before explanations were demanded by the Turkish Government and given by the Foreign Office the force was withdrawn.

Party Politics.—The seats in the city of London left vacant by the deaths of Sir Robert Fowler and Mr. Baring, and Lord Edward Cavendish's seat for West Derbyshire, were retained by the Unionists, who increased their majorities in the bye-elections in Aston Manor, Mid-Oxfordshire, and Whitehaven, and held their own in South Dorset. Mr. Bradlaugh's seat for Northampton was retained with an increased majority by the Gladstonians, who made gains also in Paisley and, under unfavorable circumstances, in North Buckinghamshire. In Hartlepool, in the Stowmarket division of Suffolk, in Harborough, and in the Wisbech division of Cambridgeshire they caused consternation to their adversaries by electing candidates to succeed Unionists.

The most important changes in the *personnel* of the Government were those necessitated by the death of Henry Cecil Raikes, the Postmaster-General, and by William Henry Smith, First Lord of the Treasury and leader of the House of Commons. Mr. Raikes was succeeded, on Sept. 21, by Sir James Ferguson, political Under-Secretary of the Foreign Office, and this post was filled by the appointment of James William Lowther. In November W. H. Smith's place as leader of the House was filled by transferring Mr. Balfour from the Irish Secretaryship to the post of First Lord of the Treasury.

In their party declarations the Gladstonian Liberals still promised home rule to Ireland, while they sought some issue to make more prominent before their English constituencies. Neither party settled on a leading issue with which to go before the country in the next general election. Both made vague promises to the labor element, and the Conservative conference at Birmingham, held on Nov. 24, proposed the creation of a labor minister. The disendowment of the Church in Wales was adopted as a part of the Gladstonian programme, and the Conservatives decided to oppose it because it would injure religion in Wales and weaken the position of the Church in England.

Local government in Ireland, on the plan adopted in England and Scotland, had been the alternative offered by the Conservatives and Unionists for Mr. Gladstone's home-rule scheme. The paralysis of the Irish party and the success of the land-purchase measure caused them to renounce this part of their programme, and meet the Gladstonians, who were committed to a home-rule project that would consume the best part of one session at least, with the argument that they had pacified and satisfied the reasonable desires of the Irish people, and would not longer allow the Irish question to interfere with English and Scottish legislation. The Birmingham conference made woman suffrage a definite plank in the Conservative platform.

Irish Parties.—When Mr. Parnell, after the scandal of the O'Shea divorce, expressed his determination to remain at the head of the Irish party, he was at first sustained in a caucus of Irish members by a majority of 40 or 50. Afterward, when it became known that Mr. Gladstone

had definitely declined to act with him longer, the majority of the party demanded his resignation, and after the belief that facts were kept in reserve that would yet clear his reputation was abandoned, the Catholic priesthood denounced him, and scarcely more than a score of the Parliamentary party adhered to him. Mr. Parnell declared that he was willing to retire from the leadership if he received adequate assurances that Mr. Gladstone would offer to Ireland a satisfactory scheme of home rule, one, above all, that would give to the Irish people entire control of the police and of the settlement of the land. Parnell and his friends met John Dillon and William O'Brien, who undertook to negotiate a truce, in Boulogne. The meetings were as fruitless as the previous ones in the committee room in Westminster Palace. O'Brien and Dillon had evaded a sentence of imprisonment by escaping on a sail boat, to France, and afterward visited the United States, as they had intended to do before they were suddenly brought to trial on the charge of having long before incited the tenants on the Smith-Barry estate to refuse to pay rent. A few weeks after the conference at Boulogne they returned to England and gave themselves up to the authorities, and on Feb. 12 were taken to Clonmel jail to serve out their term of six months. Mr. Gladstone wrote out his views, to the effect that the land question should be settled concurrently within home rule or within a short time after its establishment; otherwise it should be left to the action of the Irish Parliament, which should also have control of the constabulary when, after five years, the military police should have given place to a purely civil force. These pledges were rejected by Mr. Parnell as altogether unsatisfactory.

The truce being at an end, Parnell began a campaign in Ireland against the Gladstonian leaders, the anti-Parnellite members of Parliament, and the priests, which was carried on with such vindictive and savage bitterness on both sides as to remove all hope of reconciliation. The rupture had caused the stoppage of money supplies from America. The large invested fund remaining in Paris it was proposed to use for the sustenance of the evicted tenants; but this could not be done because Charles S. Parnell and Justin McCarthy were joint trustees, and Parnell rejected McCarthy's proposal to confide the disbursement to the Tenants' Defense Association, in accordance with a resolution passed by the anti-Parnellites. Assistance from the National League having ceased, most of the tenants on Lord Clanricarde's Portumna estate, and those on the Glensharrold and other estates, abandoned the "plan of campaign" and made what terms they could with landlords. Since the National League remained under Mr. Parnell's direction, his antagonists inaugurated on March 10, in Dublin, a new society that they called the National Federation, of which Mr. McCarthy was elected president, and in which nearly the whole of the Irish hierarchy took an active interest. In the first parliamentary election that took place after the disruption of the party at Kilkenney the Parnellites had been badly beaten. In sending a delegation to solicit financial aid, Mr. Parnell, on March 13, issued a manifesto to Irish-Americans, in which he ascribed the troubles

that had come upon the party at the instant when victory seemed near to "meddlesome interferences of English politicians," aided by a "panic among some young and raw recruits," and "eagerly seconded by a few malcontents, office-seekers, and envious persons who had crept into our ranks," and which he concluded with an appeal to the friends of the Irish cause in America to assist him in "quelling this mutiny and disloyalty to Ireland." In Ireland Parnell appealed to the revolutionary elements, and also to the sentiment of industrial discontent. In the election held on April 2 at North Sligo, where Fenianism is strong, his candidate was defeated by only 768 votes, polling 2,493 to 3,261 cast for Alderman Colliery, the anti-Parnellite and clerical candidate. The marriage of Mr. Parnell to Mrs. O'Shea on June 25 was denounced by the priests as a graver breach of the moral law than his past conduct had been. In the House of Commons the aim of the small band of Parnellites was to thwart and nullify the influence of the main Irish party, of which Justin McCarthy was nominally the leader. The Ministerial party was willing in every way to magnify the followers of Parnell at the expense of the rest, and the old leader gave a new proof of his political sagacity by accepting the land-purchase bill, while the anti-Parnellites, constrained by party tactics to harass the Government, still offered a capacious opposition. In Ireland the priests entered actively into the campaign, and, inflaming party passions by their scathing denunciations of the deposed leader, did their share to convert every parish into a battle-ground. In the riotous affrays that took place at Thurles and many other places the priests bore a part as inciters or actual leaders of the anti-Parnellite combatants. The Parnellites, while losing ground daily, were vigorous and active, and the conflict against four fifths of the Irish party and the united Catholic Church was not given up, even when O'Brien and Dillon, who had kept up the character of neutrals and mediators by not declaring for either side when they went to prison, joined the anti-Parnellites on their release in July, and were followed by E. Dwyer Gray, editor of the "Freeman's Journal," which was converted into an anti-Parnellite organ in the beginning of September. Even before these defections, the inferiority in numerical strength of the Parnell faction was shown in the Carlow election early in July. This was considered a doubtful district, and both sides put forth all their strength and made it a test election. The result was the defeat of the Parnellite candidate, who received 1,539 votes to his opponent's 3,755. Mr. Parnell still continued the controversy with his unrivaled powers of invective, taunting Mr. Dillon with subordinating the aspirations of Ireland to radical tactics at the bidding of English newspapers and with accepting ecclesiastical dictation, when he had fought the whole Church and climbed to power with the aid of the extreme Nationalists, the "young men of Ireland," whom he now sacrificed in order to join the clericals in "crushing and destroying the national sentiment of Ireland." He denied his responsibility for Mr. O'Brien's "plan of campaign," saying that he and Mr. Gladstone had condemned it in the beginning, and he refused to

release any part of the invested fund in the hands of the Paris bankers, amounting to about £40,000, for the benefit of the evicted tenants, except on the few test estates where he had himself ordered them, as a political manoeuvre, to refuse to pay rent. Owing to the continued disagreement with Mr. McCarthy, the fund remained untouched, and very little money was collected in Ireland and America by either faction, whether for the tenants or for political purposes.

The breach between the two factions was too wide to be healed, even after Mr. Parnell's death in the early part of October. (See PARNELL, CHARLES STEWART, in this volume. Recriminations had been exchanged and such enmity engendered that his adherents continued the fight against the followers of Dillon and McCarthy, who themselves were so disorganized and divided that they could not flx upon an authoritative leader. John E. Redmond, as chief of the Parnellites, contested the dead leader's seat, and after a hot contest marked by tumultuous disturbances, in which John Dillon and a great many others received severe injuries, Mr. Flavin was elected by the McCarthyites with 1,512 majority. The extreme Nationalists were still strong enough when the seat for Waterford became vacant by the death of Richard Power, aided by the labor vote, to elect Mr. Redmond over Michael Davitt on Dec. 23 by a majority of 1,775 to 1,229. When the machinery and the party organs of the league were in the hands of Mr. Parnell, the anti-Parnellites had much difficulty in establishing a newspaper to represent their views. At last, when the National Federation was organized, they issued the "National Press," which remained their official organ. At the time of the Cork riots an attempt was made to blow up the office in Dublin with dynamite.

The Labor Question.—When the Berlin Labor Congress concluded its labors the English boasted that it had done no more than to pledge the Continental governments to introduce the system of factory legislation that had been in operation in Great Britain for a quarter of a century. Yet in the factory and workshop bill the Government did not venture to insert a provision raising the limit of child labor in factories from ten to twelve years, as the congress had recommended, and Mr. Matthews, the Home Secretary, argued that the Government had not given an international pledge in subscribing to the Berlin resolution. The reason was that the people engaged in the textile industry in Lancashire and Yorkshire had brought pressure to bear against the change, although France had gone beyond the recommendation of the congress in adopting thirteen years as the limit, and other governments had redeemed their promise by introducing similar measures in their legislatures. Mr. Matthews's view was not the sense of Parliament, which gave a majority of 202 to 186 against the Government on Mr. Buxton's compromise proposition to make the limit eleven years, although his amendment to raise the limit of age for full-time work from thirteen to fourteen was rejected by a majority of 189 to 164, as it involved no consideration of international good faith. There was no stoppage of business like that caused by the London dock strike, nor of the attendant social disturbances in 1891.

The London omnibus employes struck work to demand a twelve-hour working day, imitating their Paris brethren. The organization of trade unions spread, as in France, to classes of workers that have hitherto lived remote from the influences of the labor movement, such as domestic servants, laundresses, clerks, and shop assistants. The Socialistic new unionism that demands Government interference in labor matters, supported by the recently organized bodies of unskilled laborers, but opposed by the old and wealthy trade unions, gained the upper hand in the councils of the working men, and its exponents had an opportunity to define their views in their testimony before the Royal Commission on Labor that pursued its investigations and heard a vast amount of evidence on the sweating system, Jewish immigration, and all phases of the labor problem.

May 8, being Sunday, was chosen for the labor demonstration, and at a mass meeting in Hyde Park the working men declared for the establishment of the eight-hour day by international agreement and legislative enactment. The politicians of the great parties watched with interest the proceedings of the Trades-union Congress that was opened at Newcastle on Sept. 7. Thomas Burt, who has been secretary of the huge Northumberland Miners' Mutual Association since 1865, and has sat in Parliament for Morpeth as a labor representative since 1874, was elected chairman. More than 500 delegates were present, representing more than 1,500,000 working men. The New Unionists proved their strength at the outset by rescinding the system of voting adopted at the last congress, by which each delegate casts as many votes as there are thousands of men in the union that he represents, provided the union contributes £1 to the funds of the congress for every thousand. Returning to the old procedure of voting by a simple show of hands, the New Unionists followed up their first victory by adopting a motion by 302 votes to 136, asserting that the time had arrived for the Government of the country to endeavor to introduce a universal eight-hour day by negotiation with foreign powers. Thomas Burt, Charles Fenwick, who is another workingman member of Parliament from the colliery districts of Northumberland, and the rest of the Old Unionists carried first a permissive amendment declaring that a bill reducing or fixing the hours of labor should have an optional character, and not be enforced without the consent of two thirds of the organized members of any trade, which was nullified by a further amendment declaring that the eight-hour law should be enforced in all trades and occupations, except where a majority of the organized members protest by a ballot vote against the proposal. A resolution to raise the limit of age at which children should be allowed to work in factories to thirteen years was passed by a vote of 265 to 163. The congress upheld the claim of working men to be more largely represented in Parliament and in county councils, school boards, and all local bodies. Factory inspectors and magistrates ought to be taken from among their ranks. To enable them to serve on juries without hardship, jurors should be paid at the rate of 10s. a day, and a salary should be attached to every

public office to which they aspire. It was understood that the labor vote would not be given to candidates of either party in the next general election unless they pledged themselves to support a measure giving pay to members of Parliament and local legislative bodies. The custom of subletting Government contracts was condemned, and it was held that public bodies ought not to give contracts to firms refusing to conform to the regulations, the hours of work, and the wages decreed by the trade unions.

Congress on Hygiene and Demography.—The Seventh International Congress on Hygiene and Demography met in London on Aug. 10, 1891, under the presidency of the Prince of Wales. In the division of hygiene Sir Joseph Fayrer presided over the section of preventive medicine, Sir Joseph Lister over that of bacteriology, Sir Nigel Kingscote over the one dealing with the connection between animal and human diseases, J. R. Diggle over the section that considered infant and school life, Sir H. E. Roscoe, Sir Arthur W. Bloomfield, and Sir John Goode over those that discussed chemistry and physics, architecture and engineering, in their relations to hygiene, and Lord Wantage and Lord Basing over the sections of naval and military and of state hygiene. The division of demography, embracing industrial hygiene and statistics, assembled under the presidency of Francis Galton. In most of the papers state interference, rather than individual effort, was relied on as the means to effect hygienic reform. Dr. Newsholme proposed that hygiene should be made a department of instruction in normal colleges and elementary schools. In regard to the housing of the working classes, John Hamer condemned the block system as a failure, and suggested cottage communities on the outskirts of cities, to which the railroad companies should be compelled by law to run cheap trains, a proposition that Parliament had recently refused to sanction. Mr. Burroughs went further in demanding that the railroads should be owned by the state and workmen conveyed to their homes gratis. J. R. Diggle, who is President of the London School Board, thought that the development of the physical, intellectual, and spiritual capacities of children is a matter of such transcendent importance that thoughts of possessive wealth should be left behind as the outlived conditions of barbarous society rather than that they should hinder the highest education of the whole community. The section over which he presided applauded his view, and agreed with Mrs. Besant and Dr. Parkhurst that school children ought to be fed at public expense.

Colonies.—The expenditure of the Imperial Government in connection with the colonies, exclusive of India, amounts to about £2,000,000 a year, the chief part of it for military and naval purposes. The colonies contributed £213,400 toward military expenses in 1890-'91, the Straits Settlements giving £100,000, Hong-Kong £40,000, Mauritius £30,000, Ceylon £34,400, and Malta and Natal the rest. The British troops maintained in the colonies in 1890-'91 numbered 31,680 men, not including officers, 8,796 being stationed in Malta, 5,196 in Gibraltar, 3,324 in South Africa, 2,989 in Hong-Kong, 1,493 in Halifax, 1,569 in Jamaica, 1,331 in the Wind-

ward and Leeward Islands, 1,391 in Bermuda, 1,416 in Ceylon, 533 in Mauritius, 953 in West Africa, 881 in Cyprus, 151 in St. Helena, and 111 in the Bahamas. Besides these there were 3,389 men in Egypt and 72,429 in India. In accordance with a general plan of defense for the colonies adopted in 1889, the British troops have been withdrawn from British Guiana and other colonies and concentrated at the coaling stations of Jamaica and St. Lucia, which are being strongly fortified. The military forces are to be restricted to the number necessary to defend those posts from an enemy's ships, the defense of the West India colonies being made to depend on the operations of the navy alone.

Gibraltar, with a population of 23,991, mostly descendants of Genoese settlers, is under the civil and military administration of the commander of the forces. The present Governor is Gen. Sir Leicester Smyth. The local revenue in 1890 was £63,674; the expenditure, £57,594; the military expenditure of the Imperial Government, £243,237.

Malta, with an area of 95 miles and a population in 1889 of 163,850 persons, of whom 2,201 were English, produces cotton, honey, oranges, figs, grain, and potatoes. The Governor is assisted by a Legislative Council of 6 nominated and 14 elected members. Lieut.-Gen. Sir Henry Augustus Smyth was Governor in 1891. The revenue for 1890 was estimated at £242,972 and expenditure at £232,751.

Cyprus is administered by a High Commissioner, a post held by Sir Henry Ernest Bulwer since 1886. The Legislative Council has 18 members, of whom 6 are official, 3 are elected by Mohammedans, and 9 by other inhabitants, who have resided five years on the island and pay certain taxes. In 1881 there were 45,458 Mohammedans, 137,631 Greek Christians, and 3,084 others. Under the convention with the Porte by which Great Britain occupied the island in 1878 the annual sum of £92,799 is paid to the Turkish Government. The revenue, amounting in 1889-'90 to £174,499, is derived from taxes on real estate and trade profits, tithes on the chief products, military exemption, taxes on sheep, goats, and hogs, customs and excise duties, stamps and fees, and the salt monopoly. The expenditure in 1889-'90 was £106,338. The chief exports are raisins, cocoons, wine, wheat, barley, flour, wool, and carobs. In 1889-'90 the value of the imports was £244,324, and that of the exports £314,628.

Aden, an important coaling station on the Suez Canal route to the East, with the island of Perim at the entrance of the Red Sea, the Somali Coast protectorate, the island of Socotra, off the African Coast, and the Kuria Muria Islands, on the Arabian side, is administered by a political resident who is commander of the troops and is subject to the authority of the Government of Bombay. The exports from Aden in 1890, consisting of gums, coffee, skins, cloth, and tobacco, the produce of the interior of Arabia, were valued at 25,274,678 rupees for the sea trade alone. The whole population of Aden and Perim is 34,711. From Berbera, which has 30,000 inhabitants, and the other Somali ports were exported gums, sheep and cattle, hides, ostrich feathers, coffee, and other

goods of the value of 7,839,740 rupees in 1889, and a revenue of 209,890 rupees was collected. *Sesuvium* produces aloes and a large number of cattle, sheep, and goats. The five islands of the Kuria Muria group, which were obtained from the Sultan of Muscat to give a landing place for the cable, are valuable for their guano. Bahrain and other islands in the Persian Gulf, ruled over by the Sheikh Esau, having a population of about 8,000 persons, who carry on the pearl fishery and plant a little coffee, were definitely taken under British protection in 1875.

Ceylon has an area of 25,364 square miles and a population estimated in the beginning of 1889 at 2,887,091, of whom two thirds are Singalese and one fourth are Tamils, and the rest are Moormen, or descendants of Arabs, Dutch burghers, Malays, Eurasians, English, Veddahs, and others. The Governor is assisted by an Executive Council, composed of the military commander and the 4 principal civil functionaries, and by a Legislative Council, of which the same persons form part, with 4 other officials and 8 appointed members representing various races and classes. Sir Arthur Elibank Havelock was appointed Governor on March 12, 1890. The revenue in 1889 was 15,299,877 rupees, and the expenditure was 14,906,284 rupees. For the Government railway, 181 miles long, and for the breakwater and water works at Colombo a debt of £2,246,227 has been incurred. The colony will build fortifications at Colombo, and the Imperial Government has built a fortress at Frincomalee, which is the headquarters of the naval forces in East India. Of the total area of the island something less than an eighth is under cultivation. There are 715,647 acres on which rice and grain are grown, 71,554 acres planted to coffee, 207,413 to tea, 656,766 to cocoa-nut palms, 39,486 to Palmyra palms, 30,083 to cinchona, 17,433 to tobacco, and 37,331 to cinnamon. There were 753 plumbago mines worked in 1889. The value of imports in 1889 was 60,695,135 rupees, and of exports 45,924,505 rupees. The export of coffee was 5,972,011 rupees; of cinchona, 1,687,559 rupees; tea, 17,860,144 rupees; plumbago, 4,861,387 rupees; cocoanut products, 6,402,360 rupees; areca nuts, 1,057,463 rupees. The exportation of tea increased tenfold between 1884 and 1888, and in 1889 showed a further advance of nearly 50 per cent., amounting to 34,346,492 pounds. The coffee exports have been reduced by disease to a fraction of the former quantity.

No British colony has made more extraordinary progress in commerce than the Straits Settlements, the trade of which has grown from £26,030,000 in 1880 to £47,350,000 in 1890, nearly 90 per cent. Singapore, on the highway of steam navigation, has acquired the position once held by Batavia, and latterly has grown at the expense of Penang, and is now the commercial center for all Farther India. The trading houses there represent all commercial countries. The distributing trade is in the hands of the Chinese, who have become more numerous than the Malays, and are not content to act merely as intermediaries between the native races and European merchants, but are extending their mercantile connections and successfully competing with the Europeans. The population of the Straits Settlements, comprising Singapore, Pe-

nanang, and Malacca, was estimated in 1889 at 568,000. Sir Cecil Clemente Smith has been Governor since 1887. He is assisted by an Executive Council and by a Legislative Council composed of 10 official members 5 appointed members, and 2 who are elected by the Chambers of Commerce in Singapore and Penang. The Cocos Islands were placed under the administration of the Governor of the Straits Settlements in 1886, and Christmas Island in January, 1889. The native states of Perak, Selangor, Sungei-Ujong, Jelebu, the Negri Sembilan, Johor, and Pahang, covering a large part of the Malay Peninsula, are under British protection, and are governed by the advice of British residents. The revenue of these states is derived mainly from an export duty on tin. Some of them are rich in gold, and their soil is adapted for the cultivation of coffee and cinchona on the high land and rice in the valleys. Perak is supposed to have a population of 194,800; Selangor, 120,000; Pahang, 35,000; Negri Sembilan, 34,000; Sungei-Ujong, 20,000. Chinese immigration into the Straits Settlements in 1889 was 150,809, and Indian immigration 18,136.

The revenue of the colony in 1889 was \$4,410,620, and the expenditure \$3,816,194. The debt has been reduced to \$650,237. Of the native states, Perak had in 1889 a revenue of \$2,776,583; Selangor, \$1,828,427; Sungei-Ujong, \$320,963; and Pahang, \$100,898. In the limited area of the Straits Settlements gambier and pepper are produced to a considerable extent in Singapore, which has a total area of 206 square miles; tapioca, pepper, rice, and sugar in Province Wellesley, a strip on the mainland, 270 square miles in extent, attached to the Penang settlement; and tapioca and rice in Malacca. The exports of Singapore comprise not merely the produce of the peninsula, but of the Sunda Islands and the countries of Indo-China. Even the tobacco grown by the Dutch on Sumatra is shipped from Singapore to Europe. The list of exports includes tin, pepper, rice, sugar, nutmegs, corn, sago, tapioca, buffalo hides and horns, rattans, gutta-percha, gambier, coffee, rubber, gum, dye stuffs, and many other articles. The number of vessels entered at the ports of the colony in 1889, exclusive of native craft, was 8,084, of 4,855,491 tons, and the number cleared was 8,048, of 4,830,309 tons. There are several short railroads in the native states.

Labuan, a small island off the northwest coast of Borneo, and a depot for its trade, having a population of about 6,000 Malays and Chinese traders and some 20 Europeans, is a British Crown colony. The imports in 1891 amounted to £62,363, and the exports to £66,689. The sago, gutta-percha, India-rubber, wax, and other products of Borneo and neighboring islands are collected at Labuan for shipment to Singapore. The colony is administered under the direction of Charles Vandeleur Creagh, the Governor appointed over British Borneo, with the approval of the secretary of the colonies, by the British North Borneo Company. The territory in the northern part of Borneo ceded by the Sultans of Brunei and Sulu to this company which obtained a royal charter in 1881, was proclaimed a British protectorate on May 12, 1888. The governing body is the Board of Di-

rectors in London, of which Sir Rutherford Alcock is chairman. The area, which was 31,106 square miles in 1890, with a population of 175,000, is being extended by fresh annexations. About a million acres have been granted by the Government to the planters of tobacco, which is grown of a quality equal to the best Sumatra leaf, and for the cultivation of coffee, pepper, and other tropical products. The revenue from opium and spirits, customs, and other ordinary sources was \$251,602 in 1889, and from land sales \$256,183. The expenditure was \$290,189, about \$100,000 being for salaries of local officials. The land sales amounted to nearly the same in 1890, while the ordinary revenue was \$358,461, and the expenses were \$32,950 greater. This was due in part to the inclusion for the first time of the receipts and expenses of Labuan, which were £4,272 and £3,828 respectively in 1889. The statutes having been modified so as to allow the proceeds of land sales to be treated as ordinary receipts, the company showed a surplus of £19,238 for 1890. The total revenue was \$599,239, and the expenditure \$464,143. The imports in 1890 were \$2,018,089 in value, and the exports \$902,290. The exports are chiefly jungle products, such as beeswax, birds'-nests, camphor, gutta-percha, India-rubber, rattan, sago, pepper, coffee, and tobacco. The estimated value of the exportable tobacco from the crop of 1890 is \$1,125,000. A company has undertaken to build a railroad from the east to the west coast, and the rivers already afford steam communication with districts remote from the coasts. Experiments have been made with Liberian coffee on the low lands, and with Arabian coffee in the hills. Chinamen cultivate pepper and gambier. The population of Sandakan, the chief town, is half composed of Chinese traders, and the best laborers on the tobacco plantations are Chinese. An arrangement has been made with the Indian Government for the importation of Indian coolies.

Brunei and Sarawak, territories on the north-west coast bordering on British Borneo, were placed under a British protectorate in 1888. Brunei, ruled over by a native Sultan, has an area of about 3,000 square miles. Sarawak, with an area of 45,000 square miles and a population of 300,000 souls, was governed as an independent native state by Sir James Brooke, who became Rajah of the country in 1840, and since 1868 by his nephew, the Rajah Sir Charles Johnson Brooke. Coal is found in large quantities, as in North Borneo, where a company has opened some of the mines, and gold, silver, and other metals exist in large quantities both in North Borneo and Sarawak. The revenue in 1889 amounted to \$400,900, the expenditure to \$353,260, the imports to \$2,289,475, the exports to \$2,430,540. The district of Limbang in Brunei was annexed in 1889 by Rajah Brooke against the protests of the Sultan, who appealed to the British Government to secure him justice under the terms of the treaty of protection, and who rejected a money indemnity, saying that he might be robbed of his country and people, but would not sell them. The products of the soil are the same in Sarawak as in North Borneo, except that tobacco has hitherto proved a failure. The sago palm is cut and rafted down the rivers and the pith is extracted and stamped into flour

which is sent to Kuching, the capital, or to Singapore to be cleaned, and thence to all parts of the world. Antimony is mined extensively at Busoh, in Upper Sarawak, and at Paku the Chinese blast out gold quartz from the limestone rock, crush it into powder without machinery, and wash out the gold. The Chinese carry on a considerable timber trade, and exchange European goods with the Dyaks for jungle produce. Experimental plantations of pepper, tea, and coffee promise well.

The Crown colony of Hong-Kong is an island having an area of 29 square miles, at the mouth of the Canton river, which was taken from China in 1841, and has been made the center for British commerce with China and Japan, and a naval and military station of the first class. The Governor in the beginning of 1891 was Sir William Des Vœux, appointed in 1887, who succeeded Sir William Robinson. The population in 1881 was 152,412 natives and 7,990 whites, including the military. The shipping entered and cleared in 1890 amounted to 13,500,000 tons in the harbor of Victoria, making it the most important commercial port in the world after London, Liverpool, and New York. The population has increased to 220,000. Fortifications have been built at King George's Sound and Thursday Island, and in the middle of 1891 were ready for the guns. The Legislative Council is composed of six official and five non-official members, of whom three, including one Chinaman, are nominated by the Crown, and the other two are chosen by the Chamber of Commerce and by the local magistrates. The Council in 1891 agreed to an appropriation of £20,000 for the maintenance of an extra regiment, but demurred when they learned that it was to be a regiment of native Indian, not of British troops, and the non-official members declined to accede to the appropriation demanded for increasing the salaries of the public servants. The revenue in 1889 from ordinary sources was \$1,823,549, and from premiums from land \$154,725, while the expenditure for ordinary purposes was \$1,459,167, and for extraordinary purposes, principally the new fortifications, \$374,551. The imports and exports are not known from custom-house reports, as Hong-Kong is a free port. They are estimated to have averaged \$20,000,000 and \$10,000,000 respectively in recent years. The trade in opium, sugar, flour, salt, chinaware, oil, cotton, cotton cloths, amber, sandal-wood and ivory carvings, betel, cattle, and vegetables is centered in Hong-Kong, and the business houses there are largely interested in the Chinese tea and silk trades, though the goods are shipped direct from Chinese ports.

The Andaman Islands, in the Bay of Bengal, inhabited by a curious race of small, degenerate savages, are used as a penal colony by the Indian Government, and in 1889 had a convict population of 12,549. The Nicobar Islands, south of the Andamans, were inhabited by 6,915 aborigines in 1881. The exportable products are coconuts, tortoise shell, birds' nests, ambergris, and trepang. The Laccadive Islands, off the Malabar coast, had a population in 1881 of 14,473. The chief article of export is coir or cocoa-nut fiber.

Mauritius, an island in the Indian Ocean, 500 miles east of Madagascar, having an area of 705

square miles, is administered with its dependencies, Rodrigues, Diego Garcia, and the Seychelles, by a Governor, who is assisted by an Executive Council, consisting of the military commander, the Colonial Secretary, the Procureur-General, the Receiver-General, the Auditor-General, and two elected members of the Council of Government. This Council is vested with legislative powers on the representative system. It is composed of the Governor and 27 members, of whom 8 are official, 9 are nominated by the Governor, and 10 are elected. The Governor is Sir Charles Cameron Lees, appointed in 1889. The population of Mauritius on Jan. 1, 1890, was 372,664, of whom 254,465 were Hindus. The rest includes the white planters, who are French Creoles, Africans and mixed races, and 3,765 Chinese. The revenue in 1889 was 8,744,802 rupees, and the expenditure 8,558,332 rupees. The imports were valued at 15,612,056 rupees. The staple product is sugar, which was exported to the value of 28,994,791 rupees. The total exports were 32,806,315, consisting, in addition to raw sugar, of rum, vanilla, aloe fiber, and cocoa-nut oil. The Seychelles Islands, which support a population of 16,162, export cocoa-nut oil, soap, and tortoise shell, and Rodrigues, the Chagos, and other islands produce the cocoa-nut palm.

St. Helena, in the south Atlantic, having an area of 47 square miles, was once an important port of call on the Cape route to the East. There is a population of 4,315 natives and 126 English. It is used as a naval station, and is the headquarters of a fleet of American whalers. Ascension, with an area of 35 square miles, is a sanitarium for English sailors who contract fevers on the coast of Africa. The English colonies on the west coast of Africa are the Gold Coast, Lagos, Gambia, and Sierra Leone. The Gold Coast Colony proper has an area of 15,000 square miles. Including the protectorate, the area is said to be 46,600 square miles, with 1,905,000 inhabitants. Lagos is an island on the Slave Coast. The area, including protected territory on the mainland, is 1,071 square miles, and the population is estimated at 100,000. The territory at the mouth of the river Gambia, constituted an independent colony in December, 1888, has an area of 2,700 square miles, and a population of 50,000 persons. Sierra Leone, including the island of Sherbro and the territory on the coast extending from the Searcies river to the boundary of Liberia, has a total extent of 15,000 square miles and a population of 180,000, of whom 75,000 inhabit Sierra Leone, which has an area of 300 square miles. The revenue of Lagos in 1889 was £57,633, and expenditure £57,488. The revenue of the Gold Coast was £111,388, while the expenditure was £125,003. Sierra Leone collected £70,830 of revenue and had £66,771 of expenses. In Gambia £26,281 were collected and the expenditures were £21,566. The imports of Lagos were £464,260 in value, and the exports £457,649; imports of the Gold Coast colony £440,868, exports £415,926; imports of Sierra Leone £277,781, exports £319,719; imports of Gambia £140,818, exports £167,599. Palm kernels and oil are largely exported from all the colonies except Gambia, which produces ground-nuts for export. Other articles of export are rubber, cola nuts, ivory, gum copal, wax,

cotton, and hides. Gold mining has been begun on the Gold Coast. Cotton and indigo grow wild, and coffee and cacao plantations have been started by native and French capitalists and by American missionaries in Sierra Leone. Ginger is also grown for export. The trade of this colony has suffered from the competition of the neighboring French settlements. Major Peacocke in Sierra Leone and Capt. Kenney in Gambia were engaged in 1891 in delimiting the frontiers in conjunction with French commissioners, in accordance with the Anglo-French West African agreement of Aug. 10, 1889. Gunboats were sent up the Gambia river in April, 1891, by Gilbert Thomas Carter, the Administrator at Bathurst, for the purpose of punishing the native king, who had mutilated an envoy sent to warn him to desist from plundering British colonists.

A vast region not subject to the direct dominion of the British Government is the Niger district and the adjacent Oil Rivers protectorate. The Niger territories, which under the Anglo-French agreement of Aug. 5, 1890, include all that belongs to the Kingdom of Sokoto, with the Oil Rivers district, have a total area of about 500,000 square miles and a population estimated at 17,000,000. The Niger district is governed by the Royal Niger Company, chartered on July 10, 1886, with a paid-up capital of £1,000,000. The capital is Asaba, and the military headquarters are at Lokoga. The kingdom of Sokoto was founded by Fulah conquerors on the wreck of the Haussa empire, and covers an area of unknown extent on the Niger river and eastward to the confines of Bornu and southward in the direction of Adamawa. The King of Gando and other Fulah chiefs are tributary to the Emperor of Sokoto, who is descended from the Sheikh Dam-Fodíé Othman, the founder of the kingdom. The area of Sokoto and Gando is taken to be 219,500 square miles, with a population of 15,000,000. The people cultivate rice and other grains, dates, and cotton, which they weave and dye, and also make leather goods for export. The Niger Company, as a commercial adventure, it is said, has not been much more successful than the British East Africa Company. The race for Lake Chad called for a more vigorous effort than the dispute about the Benue river with the Germans of Cameroons, which was settled diplomatically, for the French Government developed great activity in the Niger region, and German expeditions were being organized, as well as French expeditions from both north and south of the British Niger territory, to establish relations first with the Mohammedan rulers of the Western Soudan. The Niger Company was nearer Lake Chad than either the French or the Germans, and made the first bid for a protectorate over Bornu. An expedition under Charles Mackintosh left Ribago, on the Benue, in October, 1890. Kuka, the capital of Bornu, a town with a population of 120,000, was reached after three weeks' travel. The Sultan assigned quarters to the embassy and took the treaty under consideration. At the end of two months he returned the presents that had been offered, and said that he would make no treaty, as every Mohammedan state that had allowed European intrusion had suffered, and therefore

he would put forth all his military strength to prevent the access of Christians, even in the guise of traders, to his dominions. The people changed their attitude as soon as the envoys were dismissed, and the expedition took a circuitous route back and narrowly escaped injury. The six powerful Mohammedan states in the Western and Central Soudan, with a population of 28,000,000 of the most civilized and warlike races of Africa, are not likely to part with any portion of their independence without a struggle. The Sultan of Bornu maintains an army of 100,000 men. The Oil Rivers territory stands in a peculiar relation to other British possessions. For a hundred years or more British merchants have been settled there, and have governed themselves without interference from the Government, which disclaimed authority over the territory until the Niger Company began its operations. A separate protectorate was declared over the Oil Rivers, because the merchants there were unwilling to accept the domination of the company. It became necessary for the Imperial Government to impose its authority upon them, because the principal article that they dealt in was gin, which the British Government, by signing the enactments of the Brussels Conference, had engaged to exclude from this part of Africa. Major Claude M. Macdonald was appointed commissioner and consul-general for the protectorate and consul for Fernando Po. When he arrived with a large staff the merchants put various obstacles in the way of his mission. At first they refused to place houses at the disposal of the consul-general and vice-consuls, who were left ignominiously without shelter in the most unhealthful part of Africa. Major Macdonald was instructed to introduce a standard currency in the place of Hamburg spirits, which serve as the medium of exchange; to establish courts for the administration of justice to Europeans; to induce the natives to abandon inhuman practices and abolish slavery; to suppress *comey* or the transit duties collected for the native chiefs, replacing them with a tariff similar to that imposed on the colony of Lagos and the German colony of Cameroons, the chiefs being indemnified by a regular subsidy from the revenue. Major Macdonald established his headquarters at Old Calabar. He enlisted a police force of Haussas, but proceeded very cautiously in inaugurating the new régime, which was objectionable alike to the merchants and the native chiefs. After his arrival a disturbance broke out near Opobo, at Aqueta, where the acting consul and some of the police were wounded. An arrangement was made for defining the frontier between Oil Rivers and the Niger protectorate.

The Falkland Islands, near the southern extremity of South America, have an area of 6,500 square miles and about 2,000 inhabitants, who form a prosperous pastoral community, exporting wool and other sheep products of a total value of £116,102 in 1889, representing £60 *per capita*. The exports of frozen mutton to England collapsed in 1888 after two years of trial. Live sheep have been shipped to Chili, and in March, 1889, the first cargo was sent to England. The imports in 1889 were £55,716 in value. The revenue collected was £8,628, and the expenditure was £9,720.

The Bermudas are a group of 360 small islands, of which 18 or 20 are inhabited, 580 miles east of North Carolina. The total area is 24 square miles. The population in 1890 was estimated at 15,743 persons, of whom 6,243 are white. The revenue in 1889 was £29,938, and the expenditure £30,089. The imports amounted to £272,603, and the exports to £64,976. The large excess of imports is owing to the number of invalids and winter visitors who come to the islands from the United States, and to the necessity of importing nearly all food supplies. In 1890 the exports rose to £137,526. They consist entirely of onions, arrowroot, potatoes, tomatoes, beets, and lily bulbs. The little pockets of earth scattered among the rocks that form the islands and cover about one third of the surface are planted mainly with onions of a variety first grown in Teneriffe. The quantity exported in 1889 was 227,000 bushels; in 1890, 252,000 bushels; in 1891, 261,000 bushels. The price fell in 1891, partly as a result of the new tariff law of the United States, which is the market for all Bermudian agricultural produce. The only manufactures for export are palmetto and straw hats. In July, 1890, a cable was laid connecting the Bermudas with Halifax, Nova Scotia, (JAMAICA, BARBADOES, BAHAMAS, LEEWARD and WINDWARD ISLANDS, and TRINIDAD see under WEST INDIES).

On the American Continent, in addition to the Dominion of Canada and Newfoundland, Great Britain possesses the Crown colony of British Honduras and British Guiana, which is governed on the representative system established by the Dutch. British Honduras is 7,562 square miles in extent, and has 27,452 inhabitants, mostly negroes, who are employed in cutting mahogany and logwood, and latterly in growing bananas and cocoa-nuts for the American market. Coffee is planted in some parts and cattle are raised on the hills. There is a transit trade in sarsaparilla, coffee, and India-rubber with the Indians of Yucatan. The revenue in 1889 was £50,523; expenditure, £45,487; debt, £16,032. The value of the imports was £260,089, and of the exports £300,879. Sir Alfred Moloney succeeded R. T. Goldsworthy as Governor in the autumn of 1891. The colonists are agitating for a return to the representative system of government that existed prior to 1870. In April, 1890, the five non-official members of the Legislative Council voted against paying an indemnity to C. T. Hunter, awarded by a court of arbitration in London for breach of contract in connection with harbor and sanitary improvements that had been suspended at Belize. The Governor declared the resolution to pay the award carried, claiming the right to cast two votes, one as a member of the Council and a casting vote as president, upon which the non-official members resigned. No colonists could be found to take their places, and their resignations were not accepted till the lapse of twelve months, when the Governor made up what was called a "bogus Legislative Council" by appointing the colonial surgeon, the colonial engineer, and two district magistrates. The colonists contended that, being salaried officials, these men could not act as unofficial members, and the Supreme Court decided that the council thus composed



BELIZE, BRITISH HONDURAS, FROM THE HARBOR.

was unconstitutional and that an ordinance that it had passed to raise the duty on tobacco was of no effect.

British Guiana includes the settlements of Demerara, Essequibo, and Berbice. The area is said to be 109,000 square miles; the population in 1890 was 282,066. The East Indian coolies have increased from 65,161 in 1881 to 107,424 at the end of 1890. The number of immigrants during the year was 4,575. The present Governor is Viscount Gormanston. The number of registered voters is 1,596. The question of changing the Constitution so as to conform to the English model is under discussion. The boundary dispute with Venezuela, which has lasted half a century, has recently become acute, and actual collisions have occurred on the frontier. The Venezuelan Government offered to make compensation to the widow of an Englishman who was shot by the Venezuelan police on the border, a holder of a British mining grant named William Campbell. Campbell had crossed the Amacuro to prospect for gold and open the land for British colonists. He refused to take out a mining permit from the Peruvian authorities, and was shot in resisting arrest. A force of British soldiers was then sent to take possession of the whole district. The northwest district, claimed by Venezuela, but held by England, contains rich placer mines. Early in 1891 diamonds were discovered in the same district. The output of the gold mines has been doubling year by year. In 1889 the exports of the metal were valued at £109,234. The line claimed by the British is the one drawn by Sir Robert Schomburg in 1842, which was based partly on the supposed extent of the ancient Dutch possessions and partly on the idea of establishing a natural frontier following ranges of mountains and rivers. The Venezuelans protested that Spanish dominion actually extended far to the north of the Amacuro river, fixed on as the boundary by Schomburg, reaching to Essequibo river, and that it embraced the undeveloped northern part of the British colony and included the recently discovered mineral districts in the west and the entrance to Orinoco river.

Guzman Blanco, when President of Venezuela, as a retaliatory measure, imposed a differential duty of 30 per cent. on imports from the British West Indies, injuring the trade of Trinidad especially; and this has not yet been taken off. Venezuela's offer to arbitrate the boundary dispute was rejected by Lord Salisbury. When British military posts were established in the disputed territory, Venezuela appealed to the United States and to the other powers to use their good offices to prevent British encroachments. Mr. Lincoln, the United States minister in London, in June, 1890, secured the renewal of diplomatic relations between Great Britain and Venezuela. The revenue of British Guiana in 1889-'90 was £522,862, and the expenditure £500,962. The public debt in 1890 was £737,399. The total value of the imports in 1889 was £1,803,776, the chief items being flour, rice, machinery, fertilizers, and pork. The value of the exports was £2,310,141. The chief articles were sugar, of the value of £1,914,143, and rum, of the value of £165,854, after which came gold, molasses, and timber.

GREECE, a constitutional monarchy in south-eastern Europe. The legislative power is exercised by a single chamber called the Boulé, having 150 members, who are elected by universal suffrage for four years. It meets on Nov. 1 of the Greek calendar, and remains in session for not less than three and not more than six months. The executive authority is exercised by the King through his ministers, who are responsible to the Assembly. The reigning King is Georgios I, son of King Christian of Denmark, elected by the National Assembly at Athens on March 30, 1863. He married Olga, daughter of the Grand Duke Constantine of Russia, and has seven children, the oldest of whom, Prince Konstantinos, born Aug. 2, 1868, is the heir-apparent. The ministry at the beginning of 1891 was composed as follows: President of the Council, Minister of the Interior, and Minister of War, P. T. Delyannis, appointed Nov. 5, 1890; Minister of Foreign Affairs, L. Deligeorgis; Minister of Justice, A. T. Zaimis; Minister of Finance, C. Karapanos; Minister of Worship and Instruction, C. Gerokostopoulos; Minister of Marine, C. A. Koumoundouros.

Area and Population.—Greece has an area of 25,041 square miles, and a population, as ascertained by the census of 1889, of 2,187,208 persons, of whom 1,133,625 are males and 1,053,583 females. In European Turkey there are supposed to be about 3,500,000 people of the Greek race, language, and religion; in Crete and the other Ottoman Islands, 400,000; in Asiatic Turkey, 2,000,000. In Greece there is an infusion of Albanian blood, though not more than 100,000 Albanians have retained their nationality.

Finance.—The estimate of revenue for 1891 is 96,971,000 drachmai or francs, while the expenditure is estimated at 99,253,000 drachmai. The mobilization of the army and the deficits of 1885 and 1886 added 120,000,000 drachmai to the public debt, and compelled the Government to abandon the recently restored metallic currency and reissue paper. To balance the budgets of 1887 and 1888 a loan of 135,000,000 drachmai was raised at 4 per cent., guaranteed on the salt, petroleum, and match monopolies. By means of a loan of 30,000,000 drachmai obtained in 1889 and a part of the former loan, debts bearing 7 and 9 per cent. interest were paid off. For the construction of the Athens and Larissa Railroad to bring Greece into communication with the Continental network a new loan of about 90,000,000 drachmai was contracted in June, 1890. The burdens imposed by the reorganization of the finances effected by Tricoupis so improved the credit of Greece that, whereas in 1886 she could not borrow at a lower rate than 7½ per cent., the last loan was raised at the net rate of 5½ per cent. The fall in the rate of exchange to 17 per cent. below par increases the expenses of the debt more than half the amount of the interest saved by the conversions, and the cost of maintaining the three new ironclads adds as much more to the budget. The total debt on Jan. 1, 1890, was 737,885,415 drachmai, comprising 448,887,647 drachmai of terminable loans, 202,469,298 drachmai of consolidated *rentes*, 12,662,513 drachmai of floating debt, and 73,865,957 drachmai of forced paper currency. Minister Karapanos, failing to obtain a further loan in 1891, or

to get the consent of his colleagues to a tobacco monopoly, resigned in September.

The Army and Navy.—Under the law of universal liability to service, the war strength of the Greek army is stated to be 104,500 men, exclusive of the territorial army of 146,000 men. The nominal strength of the active army, according to the military budget for 1890, is 1,961 officers, including civilians employed in the Ministry of War, 5,869 non-commissioned officers, and 18,304 soldiers, making in all 26,134 of all ranks, with 3,714 horses and 120 guns.

The Greek fleet, which in 1889 had only two small ironclads, one of 1,770 tons armed with two 10-ton Krupp guns and four 20-pounders and the other of 2,060 tons carrying four 6-ton and two 5-ton guns, is now believed to be equal to the Turkish, and some patriotic Greeks assert that it is superior. The "Spetzæ," a steel armor-clad of 6,000 tons, launched in 1889, was completed in the following year, and two more of the same class have subsequently been built in France, the last one leaving Cherbourg for the Piræus in August, 1891. The new war ships are supplemented by 30 torpedo boats, including 2 Nordenfeldt submarine boats. There are 2 small corvettes, 2 cruisers, and 16 gunboats of various dates, besides 22 minor unprotected vessels. The navy was manned in 1890 by 3,361 officers and men, recruited partly by enlistment and partly by conscription among the maritime population, the term of service having been lengthened by the law of 1887 to two years.

Commerce.—The imports in 1889 were valued at 132,653,248 drachmai, and the exports at 107,777,808 drachmai. Three eighths of the imports are manufactures, and cereals form an equal proportion, and nearly half the remainder consists of pastoral and fishery products. Yet Greece is an agricultural country, and raises large quantities of wheat and barley. There are about 3,500,000 sheep in the country, and large flocks of goats, which cause more damage than benefit by browsing on vegetation. Agriculture is in a very backward state, but much attention is given to the cultivation of the currant or Zante raisin, the chief staple of the export trade. Olives, grapes, tobacco, and cotton are valuable crops, and the mineral exports are important. The chief imports in 1889 were: grain and rice, of the value of 45,283,000 drachmai; textile manufactures, 26,579,000 drachmai; animals and animal products, 14,523,000 drachmai; minerals and metals, 8,714,000 drachmai; metal manufactures, 7,679,000 drachmai; timber, 6,896,000 drachmai. The chief exports were: dried currants, of the value of 55,568,000 drachmai; lead, 7,640,000 drachmai; zinc, 7,044,000 drachmai; olive oil, 6,208,000 drachmai; animals and animal products, 6,043,000 drachmai; wine, 4,608,000 drachmai; figs, 2,425,000 drachmai; timber, 1,800,000 drachmai; iron, 1,789,000 drachmai. The currant crop has not increased with the extension of the cultivation, because the old vineyards have become less productive and require to be renewed. The crop of 1890 is estimated at 145,000 tons, against 143,000 tons in 1889 and 160,000 tons in 1888. The exports to England have been increased, by the reduction of the import duty to 2s. per hundred-weight, to two or three times the quantity formerly consumed in

that country. In 1890 they amounted to 57,000 tons. A similar result is looked for in the United States as a consequence of the abolition of the duty. In France the importation has been checked by the imposition of an excise duty of 4 francs on every hectolitre of wine made from currants, designed for the protection of French wine-growers.

Navigation.—The Greek merchant marine in 1890 consisted of 81 steam vessels, of 40,484 tons, and 5,809 sailing vessels, of 223,158 tons. The shipping entered at Greek ports in 1889 numbered 4,861 vessels, of 2,249,109 tons, while 3,945 were cleared, of 2,124,269 tons. Of the total number entered, 1,851, of 281,235 tons, were Greek, while 408, of 417,316 tons, were British. The carrying trade of the Levant and the Black Sea ports is largely in the hands of the Greeks.

Communications.—The length of railroads open for traffic at the end of 1890 was 452 miles. There were building 127 miles more, and 517 miles were projected. The ship canal across the Isthmus of Corinth has been completed for three quarters of the distance, which is about 4 miles. The telegraph lines, including cables, had a total length in 1889 of 4,382 miles, with 5,082 miles of wire. During that year 684,650 internal and 271,189 international messages were sent over the wires. The receipts for 1888 were 1,130,160 drachmai, and the expenses 992,320 drachmai. The number of letters sent through the post-office in 1888 was 6,344,000; of postal cards, 180,000; of newspapers, samples, and circulars, 7,706,000. The receipts were 1,193,930 drachmai, and the expenses 1,198,473 drachmai.

Anti-Semitic Outbreak.—Anti-Jewish riots of the kind that have occurred in Russia in recent years broke out in the city of Corfu and other places in the Ionian Islands in April and May. The body of a girl child having been found in the Ghetto at Corfu, a report was circulated that it was a Christian child that the Jews had murdered for the feast of the Passover. The Jews believed Christians had murdered the child to furnish a pretext for plunder and violence. It was afterward identified as the daughter of a well known Hebrew. On April 27 a mob broke into the Jewish quarter threatening to burn the Hebrews alive, and after several had been beaten and stoned, the troops dispersed the rioters. The shops in the Jewish quarter were closed by order of the authorities, and a cordon of soldiers was placed around the quarter. On April 30 an attack on the Jewish population at Zante was attempted, and the military, in order to put a stop to the disorder, fired on the mob, killing three Christians and wounding a large number. The garrisons on both islands were largely increased. In Corfu the Jews were confined in their houses for weeks, and could only obtain food with great risk and at famine prices. Several died of starvation. The whole trade of the place was paralyzed. The military cordon was kept up, but the soldiers sympathized with the mob. On May 12 another attack was made on the Ghetto, and two Jews were killed and many injured. The Ottoman Government made arrangements to succor Turkish Jews, and gunboats were sent by the French and English Governments to protect their subjects. Two attempts were made to set fire to

the Ghetto. After the second outbreak at Corfu a state of siege was declared, and a sufficient force was sent to make an end of the disturbance. The monarch of Corfu and the prefect of the town were removed for neglect of their duty.

GRÉVY, FRANÇOIS JULES PAUL, ex-President of the French Republic, born in Mont-sous-Vaudrey, Department of the Jura, Aug. 15, 1807; died there, Sept. 9, 1891. He was the son of a forester who volunteered in 1792 to fight in the army of the republic and who brought up his children as republicans. Jules, a robust and athletic young mountaineer, began his school life at the age of ten in the College of Poligny, went thence to Besançon, and prepared himself for the bar in the University at Paris, where he led a sober, decorous, and studious life. At the outbreak of the revolution of 1830 he joined the insurgents, taking part in the capture of the Babylone barracks. He was admitted to the bar in 1837, and began practice in Paris. By his defense of Armand Barbes and his fellow-conspirators against the Government of Louis Philippe, in 1839, he established his reputation as an advocate deeply versed in the code and skilled in the technicalities of procedure, and, moreover, as a legal champion of republicanism, whose forensic services were wanted and prized when revolutionists were tried in the courts. In 1848 he was sent to Jura by the Provisional Government as prefect or commissary of the republic, as the office was then called. The diplomatic tact with which he arrested disturbances and appeased political and religious passions gave him a reputation for political ability. He headed the list of eight Deputies elected to represent his native department in the Constituent Assembly. He was chosen Vice-President of the Assembly, and placed on the Committee of Justice. Taking his seat with the Advanced Republicans, he presented the famous *proposition Grévy*, which, although it was overwhelmingly defeated, placed its author ever afterward on a pedestal as a conspicuous representative of republicanism. Perceiving that if the executive head of the Government were elected by universal suffrage it would open the door to Cæsarism (for, having as many popular votes as all the members of the Assembly together, the President of the Republic, in case of a conflict of opinion between himself and the Assembly, could assert that he had the mandate of the nation to suppress the legislative branch or nullify its decisions), he proposed that the executive power should be exercised by a council of ministers, with a president of the council at its head, just as it is in Switzerland. The chief of the state would then be appointed and subject to removal by the vote of the Chamber. This plan was too radical for the Assembly, and the project of an independent executive deriving its authority from a *plébiscite* carried the day. Napoleon was elected President, and in the Legislative Assembly of 1849 Grévy combated the beginnings of Bonapartism by opposing each measure proposed by the President and his accomplices. After the *coup d'état*, which every one said would have been prevented if Grévy's amendment had been carried, he was arrested and kept in prison for several months. After

his release, he pleaded cases in the courts and held a leading place at the bar. He advocated Liberal principles, but not as an active politician; he would not take the oath of allegiance to Napoleon, and therefore refused to enter the Chamber. In 1868, when it began to be dangerous to assert hostility to the Emperor, his friends overcame his scruples, representing that many Liberals were deterred by his illustrious example from accepting a nomination to the Chamber. Elected to the Corps Legislatif in that year from his old department, he took his seat among the Republicans. Although he seldom spoke, he was re-elected without opposition in 1869. When asked after the downfall of Napoleon to join the self-appointed Government of Sept 4, he refused, retiring with Thiers. As an upholder of legality, he declared that the fall of the empire ought to be decreed by the Chambers. When the Legislative Assembly was invaded by the mob, regular proceedings were rendered impossible. He declined to associate himself with the irregularly constituted Government of National Defense, and likewise declined to join M. Thiers in his irregular diplomatic campaign. When the latter asked him to declare what part he would take in the national emergency, he said that his part was to carry a musket, and while the war lasted he served in the National Guard. He was returned to the National Assembly by his compatriots of the Jura on the simple platform of "a permanent republic and any acceptable peace without revenge." On Feb. 17, 1871, a week after the session opened, he was elected by an almost unanimous vote to the presidency of the Chamber. In the first sitting he proposed that M. Thiers should be made chief of the Executive, and should hold his power during the pleasure of the Assembly, realizing the proposition that had been the foundation of his political fame. He remained in the chair over two years, being seven times re-elected. The conciliatory tact, the impartial judgment, the calm decision with which he presided over this turbulent body during the most critical period of its history, made Jules Grévy one of the conspicuous figures in European politics. In February, 1873, the Conservatives being in the majority, the Duc de Broglie resigned his place as minister to London, to lead the attack that was designed to overthrow Thiers. It was first necessary to get Grévy out of the way and place in the chair a man pliant to their purposes. They disputed his decisions, questioned his authority, harassed and insulted him, and when he found himself unable to maintain the dignity of the chair, after an offensive personal remark of the Duc de Grammont which the majority applauded, he resigned in spite of the pleadings of his friends, who begged him to stay at his post in all circumstances. M. Buffet, his successor, became an instrument in the hands of the conspirators. There were those even then who said that Grévy was a wily and calculating politician who willingly contributed to the fall of Thiers, to whom he had shrewdly volunteered to advance to the first place in the Republican party, thus making sure of the succession, upon which he was eager now to enter. In the following October he published a pamphlet on "The Necessary Government," in which he took the position that

the time had gone by when the elements of a constitutional monarchy existed in France, which had become a pure democracy and could only exist and develop under the republic. In 1876 the Republicans won the general election. M. Grévy ascended the chair of the Chamber as by right. After the death of Thiers he became the undisputed Republican candidate for the presidency of the republic. When Marshal MacMahon dissolved the Chamber without reason, in order to carry out the Duc de Broglie's monarchial conspiracy, M. Grévy uttered these few simple words that had a magical effect on the bewildered country: "In dismissing this Chamber, I wish to say that it has never, during its too brief career, ceased for one moment to merit the esteem and confidence of the country." The conspiracy against the republic failed. Grévy was re-elected to the presidency of the Chamber on May 16, 1877. Marshal MacMahon, after losing the decisive battle, could not be induced to continue a campaign of underground plots. He sent for M. Grévy and announced his readiness to resign the presidency under certain guarantees, and when he could obtain no promises or conditions he handed him his resignation to take to the Chamber, saying: "You're an honest man; I have full trust in you."

Grévy was elected President of the republic. The military guards and equipages and monarchial trappings of his predecessor were cast aside. He introduced into the *Élysée* the simple informality and quiet ways of ordinary *bourgeois* life, and the people found this dignified and admirable, except that it began to be said that he was too saving. The grave, quiet, modest, and dignified citizen at the head of the state, who cultivated agreeable social relations with men of all parties and kept himself ostensibly free from political schemes and entanglements, was esteemed an ideal Republican President, though afterward it was said that, in helping to crush M. Gambetta, in keeping M. de Freycinet in the background, and in all his quiet combinations, he was guided by motives of scheming personal politics. He was re-elected to the presidency on Dec. 28, 1885, for lack of another pre-eminent Republican candidate, and soon it was found that this was a mistake of the Republican party; for, whether he was more egotist than patriot or the contrary, he had grown too old, and too fond of ease and the society of his grandchildren. He let his son-in-law, M. Wilson, receive ministers and officials, was guided by that person's advice in political affairs, humored his prejudice against capital punishment by pardoning murderers, and allowed him to change the ways and manners of the presidential palace. M. Wilson's political and commercial speculations compromised the reputation that M. Grévy had given to the presidential establishment. Then came the decoration scandal, the Limousin revelations of some culpable connection between Wilson and the traffic in the ribbons of the Legion of Honor, an order that M. Grévy had proposed to abolish when he first became President. Grévy could have dismissed Wilson from his household and served out his second term with better satisfaction to the public than before, or he might have resigned at once on account of the family stain, and preserved his great reputation

as a pure and upright public man. He endeavored to shield Wilson's good name with his influence as President, and clung both to the office and to his grandchildren until he was compelled to resign, on Dec. 2, 1887, dishonored by the ignoble contest. He retired to his birthplace, and is supposed to have been working since on a book of "Memoirs." A steel-plate portrait of President Grévy appeared in the "Annual Cyclopædia" for 1879.

GUATEMALA, a republic in Central America, independent since 1847. The Constitution, adopted in December, 1879, and amended in October, 1889, vests the legislative power in the National Assembly, half of the members of which are replaced at each biennial election. One member is elected for every 20,000 inhabitants. The presidential term is six years. Gen. Manuel Barillas was elected President on March 15, 1886.

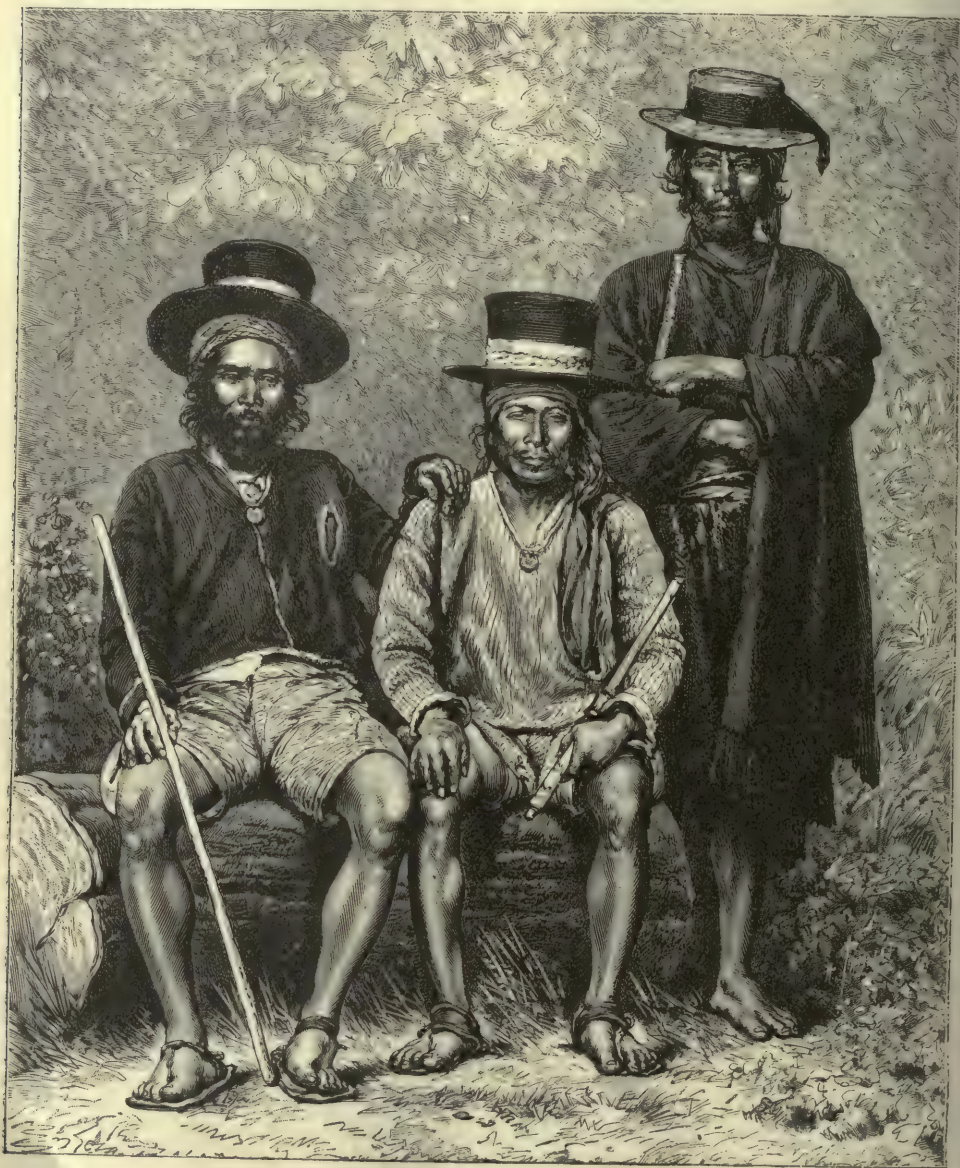
Area and Population.—The estimated area of Guatemala is 46,800 square miles. The population was estimated in 1889 at 1,460,017. About three fifths are civilized Indians, and among the white population there is a large intermixture of Indian blood. The capital city, Guatemala la Nueva, had 65,796 inhabitants in 1889, of whom about 10 per cent. were of European birth or descent. The number of births registered in 1889 was 61,222, and the number of deaths 28,321, which is much below the actual number. The number of marriages was 5,475. Among the births 50 per cent. of the white and 25 per cent. of the Indian children are illegitimate. The State spent \$525,625 in 1888 for education, which is compulsory, free, and undenominational. The Catholic religion prevails, but is no longer the state religion.

Finance.—The revenue in 1888 was \$4,580,264, and the expenditure \$4,577,404. The extraordinary receipts were \$1,802,403. About half of the revenue was derived from customs and one third from the internal revenue duties on alcohol and tobacco. The import duty on tobacco was reduced on Nov. 20, 1890, from 55 to 20 cents a pound. The estimated receipts for 1890 were \$5,060,000, and the expenditure \$4,610,675. The appropriations for public credit and finance in 1890 were \$1,343,074; for education, \$710,364; for the army, \$1,154,189. The nominal strength of the standing army is 3,500 men, and that of the militia is 67,300 men. In 1889 the net revenue was \$5,585,912. The gross revenue was \$6,102,172, of which \$2,700,119 were derived from import duties, \$552,045 from export duties, \$1,811,773 from the liquor monopoly, and the rest from a considerable variety of minor taxes. In the postal and telegraph service there was a deficit of \$84,959. The total debt was \$13,569,190, including the consolidated home debt of \$6,495,062; paper money, \$1,129,968; foreign debt, \$922,700 or \$4,613,500 in currency; unfunded and floating debt, \$1,330,660.

Commerce and Production.—The total value of imports in 1889 was \$7,079,373. The values imported from the chief importing countries were as follow: England, \$1,598,762; United States, \$1,332,398; South American countries, \$1,207,624; France, \$929,580; Germany, \$715,239; Central American countries, \$691,857. The imports of cotton goods were \$910,469 in value; woolen goods, \$309,059; flour, \$163,487; silk

goods, \$159,592; wine, \$134,159; liquors, \$132,629; iron goods, \$94,845. The value of the exports was \$13,247,689. The coffee of Guatemala, represented in this total by \$12,704,948, brings double the price in the market of that of other countries, being of so fine a quality that it is

work more than is necessary to supply their simple needs. To this same apathy and to the former political disturbances in the country is due the neglect of the mines of gold, silver, lead, copper, iron, tin, and cinnabar that were once worked under the direction of Jesuit missionaries, and



ALCALDES OF UPPER GUATEMALA.

used to flavor other sorts. The crop of 1891 is estimated at 80,000,000 pounds. The cultivation is capable of large extension, and plantations have been enlarged considerably in recent years, yet without a corresponding increase in the product, for the Indian laborers can not be induced to

were a source of great revenue to the Church and the state. Besides coffee, the chief exports at present are hides, rubber, sugar, bananas, aguardiente, and cacao. The cacao of Guatemala ranks among the best sorts. Mahogany and other cabinet woods are abundant.

Communications.—The settled part of the country is at a distance from the sea, and most of the travel and transportation must be done with mules. A railroad connecting the capital with San José has a length of 72 miles, and another, 27 miles in length, runs from Champerico to Retalhuleu. The former, which was built by an American company at a cost of \$4,000,000, has been rebuilt in the section between Escuintla and Palen. The net receipts have more than doubled in the past four years. In 1890 the gross receipts were \$658,042, and the net earnings \$355,361. There were 185 miles of new railroads under construction in 1889.

The number of letters delivered in 1888 was 1,888,676; of papers, circulars, etc., 2,576,345. There were 1,992 miles of telegraph in 1891. The number of messages in 1888 was 457,009.

Civil Disturbances.—Although peace was kept by the Central American republics throughout 1891, there were rumors of war and revolution, military preparations, and menaces both from Salvador and Guatemala, and an attempted revolt against Barillas. Early in the year Guatemala began to strengthen her army. Gen. Cayetano Sanchez was shot in February for insubordination. In the spring Salvadorian forces were massed at Santa Ana on the frontier. The President appointed a new ministry in June, taking charge of the War Department, and

making Francisco Vilela Minister of the Interior, Emilio Leon Minister of Foreign Affairs and Public Works, and Feliciano Aguilar Minister of Finance. The people of Quezaltenango, an important place in upper Guatemala, rose against the Government, and defeated the garrison. The mountains were full of malcontents, who distributed revolutionary proclamations. On Sept. 15, the anniversary of independence, when Manuel Montufar, son of a leading partisan of Barillas, who was one of the candidates for the succession, began a political speech in the plaza of Guatemala city, the mob drove him and the other official speakers from the platform, and elected orators by acclamation. A battalion of infantry attempted to clear the plaza with fixed bayonets, and was driven back by revolver shots, leaving several dead. Barillas then ordered out the artillery, and when guns were planted in the plaza the populace dispersed, but took possession of the side streets, where for the next two days they fought the infantry. Bringing up reinforcements from outside districts and proclaiming martial law, Barillas finally put down the insurrection after some hundreds of people were slain. On opening Congress, on Oct. 23, Gen. Barillas gave assurances of peace at home and abroad and of the improving financial position of the Government. In November revolutionary bands were reported on the Mexican frontier.

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HAWAII, a kingdom occupying the Hawaiian Islands in the Pacific Ocean, 2,100 miles from San Francisco. The reigning sovereign is Queen Liliuokalani, the eldest sister of King Kalakaua, whom she succeeded on Jan. 20, 1891. She was born on Sept. 2, 1838, and married in 1862 John O. Dominis, an American by birth, who was appointed Governor of Oahu. On March 9 Princess Victoria Kaiulani, niece of Queen Liliuokalani, born Oct. 16, 1875, was proclaimed heiress-apparent to the throne. The ministers are appointed by the sovereign, and must retire if the Legislature passes a vote of want of confidence. Every royal decree must be countersigned by a minister. The Legislative Assembly is composed of 24 Representatives, 24 Nobles, and the 4 ministers, who are members of the House of Nobles *ex officio*. An educational and a property qualification are required in voting for Representatives, and a higher limit of income is necessary to qualify a citizen to vote for a Noble. The Legislature meets once in two years. The term of the Representative terminates with the session, and that of the Noble lasts six years; otherwise their powers are the same, and they form a single chamber. The Cabinet in the beginning of 1891 was composed as follows: Minister of Foreign Affairs, J. A. Cummins; Minister of the Interior, C. N. Spencer; Attorney-General, A. P. Petersen; Minister of Finance, G. Brown.

Area and Population.—The area of the islands is as follows: Hawaii, 4,210 square miles; Maui, 760; Oahu, 600; Kauai, 590; Molokai, 270; Lanai, 150; Nihau, 97; Kahoolawe, 63; total, 6,640 square miles. The population is about 90,000, or 10,000 more than when the cen-

sus was taken in 1884. Of the present population about 40,000 are natives and half-castes, 20,000 Japanese, 13,000 Chinese, 9,000 Portuguese, 2,000 born in the United States, 1,200 English, German, and French, and the rest of various races. Among the Japanese immigrants, males outnumber females 5 to 1, and among the Chinese 16 to 1. Among the other immigrants the ratio between the sexes is nearly normal. The Protestants number about 30,000 and the Roman Catholics 20,000; the rest are Asiatics or indifferent to religion. The Portuguese are allowed to vote, while the Chinese and Japanese can not become citizens. The number of electors is about 15,000, of whom 3,000 belong by birth or origin to the leading white races. The native Kanakas are of a Malay-Polynesian race, nearly allied to the Maoris of New Zealand, and, like the latter, they are rapidly dying out, the victims of small-pox and other diseases and of alcohol and other such influences introduced with European civilization. About one third of them live in the capital for the sake of an easy, pleasant life. Many think that at the end of another generation the pure native stock will become extinct, although there is still a class of able-bodied, industrious Hawaiians, and by the sugar planters they are regarded as the best workers, next to the Portuguese, the Chinese being classed usually next, and the Japanese last on account of their sensitive and impracticable disposition. The native Hawaiians have decreased 14 per cent. since 1884, while the half-castes, chiefly of American, European, and Chinese admixture, have increased 50 per cent. Drink causes an undue amount of mortality

among the natives, and its debilitating and pauperizing effects have increased since the late King Kalakaua had certain restrictions on the traffic removed. Though they have been Christian for generations, the ignorant still apply when sick to the arts of the native medicine-man, and are given poisonous mixtures that cause many premature deaths. The capital, Honolulu, on the island of Oahu, had 20,487 inhabitants in 1884. The net immigration in 1885 was 3,603; in 1886, 1,536; in 1887, 1,030; in 1888, 2,642. In 1889 there were 3,671 arrivals and 2,313 departures, an excess of 1,358 immigrants, most of them Chinamen and Japanese.

Education.—A complete system of secular common schools is provided for all, Roman Catholic and Protestant religious teachers having access to the children out of school hours. About half the pupils are Hawaiians, and the rest are chiefly Chinese and Portuguese half-castes, with a few Germans and others. English is generally taught. There are excellent superior and special schools, notably the Oahu College, for the sons of Americans; the Kauai Industrial School, a co-educational institution; and the Kamehameha Industrial School for Hawaiian boys and girls, in separate buildings, to found which the late Mrs. Charles R. Bishop, a Hawaiian princess, left her entire fortune of \$500,000. The number of primary schools in 1890 was 178, in which there were about 10,000 pupils.

Finance.—For the two years ending March 31, 1890, the revenue was \$3,632,197 and the expenditure \$3,250,510. Of the revenue, \$1,082,766 were derived from customs and \$901,803 from internal taxes. The largest item of expenditure was \$1,180,123 for the interior. The revenue for the financial period 1890-92 was estimated at \$2,862,505, and the expenditure at \$2,853,116. The public debt amounted on March 31, 1890, to \$1,934,000, raised in London to pay off prior indebtedness, and paying 6 per cent. interest. The loan was authorized by the act of October, 1886, and the portion not yet issued was offered in September, 1891.

Commerce and Production.—Of the capital invested in plantations and other productive enterprises, about \$30,000,000, half belongs to foreigners—the chief part to citizens of the United States—and of the remainder not more than a fifth is the property of natives. The profits in sugar growing, under the reciprocity treaty with the United States, have been enormous. The soil is exceedingly fertile, and is capable of bringing forth a remarkable variety of products, but sugar planting has been extended to the exclusion of other cultures. The export of raw sugar to the United States in 1889 was 242,000,000 pounds. The admission of sugar free into the United States from the West Indies and Europe reduces the profits to ordinary rates, and those planters who have borrowed at the prevailing high rates of interest or labor under other disadvantages must fail. It is expected that fully one third of the plantations will be ruined, owing to the operation of the McKinley bill, which has also had the effect of reducing wages by one third or one half, while rice and other food staples were unusually dear in 1891. The health and morality of the people have suffered from their being deprived of domestic life

and herded together on the plantations; and, therefore, when the present crisis is surmounted, and other industries besides the cultivation of the sugar-cane have been developed, such as will give small cultivators a chance, the country can still make great progress in wealth and commerce under sounder social conditions. Already coffee is being planted, and there is some trade in fruits, which mature three months earlier than in California. Rice is grown extensively, both for food and for export, and hides and wool are also exported. The soil and climate are adapted for the cultivation of pine-apples, bananas, melons, and many other kinds of fruit. The value of the imports in 1889 was \$5,439,000, against \$4,541,000 in 1888, \$4,944,000 in 1887, and \$4,878,000 in 1886. The exports of domestic products were valued at \$14,040,000 in 1889, against \$11,631,000 in 1888, \$9,435,000 in 1887, and \$10,340,000 in 1886. The exports of sugar in 1889 were \$13,089,302 in value. The principal other articles of export were rice, of the value of \$451,134; bananas, \$135,728; hides, \$72,973. The imports are provisions, clothing, grain, machinery, timber, hardware, and cotton cloth. Nine tenths of the trade is with the United States.

Steamers run between Honolulu and San Francisco, New Zealand, Australia, and China. In the inter-island traffic 18 steamers and a large number of schooners are engaged. The fleet belonging to Hawaii numbered 61 vessels in 1888, having an aggregate burden of 15,406 tons. There are railroads on the three largest islands, having a total length of 56 miles, and 250 miles of telegraph and cable traverse and connect them. The general post-office at Honolulu in 1889 received 882,094 letters and dispatched 534,576. Formerly gold and silver coins of any country were current in Hawaii at their nominal or exchange values, but since Dec. 1, 1884, only gold coins of the United States are legal tender for amounts over \$10, and American or Hawaiian silver coins for smaller payments. Treasury certificates are issued for deposits of coin, and these are the only paper currency.

Liliuokalani's Reign.—The death of Kalakaua and the new tariff of the United States combined to revive some of the political questions that were scarcely settled by the new Constitution of July 6, 1887. The men at the head of the Government represented the principle of a parliamentary monarchy of the British type. Opposed to them was the smaller, but vigorous, American party, advocating a republican form of government, and looking forward to annexation to the United States, which was regarded by this group as a necessity for the prosperity of Hawaii, since the McKinley bill had placed Hawaiian sugar on the same footing as the product of the Spanish and English colonies and Europe. Allied to these, as members of the Opposition, but pursuing an entirely different object, were the people who believed in Hawaii for the Hawaiians, and sought to exclude Europeans and Americans from high offices and place native Kanakas in control of the state. A fourth political force was the Queen herself, who was upheld by an influential *clique* in her purpose to resume the traditional personal rule that Kalakaua in his financial and political difficulties had signed away. After coming to the throne, she announced the inten-

tion of appointing a new Cabinet. The native party called on her to select Hawaiians and persons identified with their interests. Col. Ashford, commander of the Honolulu Rifles, a volunteer corps that is more efficient than the regular military force, and is maintained merely as the sovereign's body guard, was suspected of a plot to carry out this idea by force. This scheme was resisted by the American missionaries and officials, headed by Chief-Justice Judd, who favored the sugar-planting interest, and who presented a list to which the Queen took exception because it was composed of white men who were opposed to placing natives in responsible posts. Various other combinations were suggested, and when a list was at last made up, with Mr. Widemann as Premier, two members of the old Cabinet refused to retire, on the Constitutional ground that they could only be displaced by a vote of censure. Leaving this question to be settled by the Supreme Court, Queen Liliuokalani at last made definite selections, which were announced on Feb. 25. The Chief Justice and other members of the Supreme Court, with one dissenting voice, made a decision that, besides the method set forth in the constitution, a sovereign on ascending the throne can exercise the royal prerogative to dismiss the ministers of his predecessor in order to appoint others possessing his confidence. The new ministry was composed of the following members: Premier and Minister of Foreign Affairs, Samuel Parker; Minister of the Interior, Charles N. Spencer, who had the same portfolio in the preceding Cabinet; Minister of Finance, Hermann Widemann; Attorney-General, William Whiting. Mr. Widemann was unable to cope with the financial crisis created by the new American reciprocity treaties, and gave up his place in the summer to a Minister of Finance capable of commanding more confidence. The death of Mr. Dominis, the Queen's consort, in the early part of September, Liliuokalani's known predilections for the English, and the fact that the heiress-apparent was taken by her father, A. S. Cleghorn, who was born in Scotland, to be educated in England, gave rise to rumors of British intrigues to gain an ascendancy in Hawaii to the detriment of the United States. Responsible statesmen studiously denied the possibility of the Hawaiians accepting a British protectorate, and spoke of the prospect of their sacrificing their independence to become a part of the United States as equally remote and at present unacceptable on either side.

Treaty Negotiations with the United States.—The Hawaiians considered that the reciprocity clause of the McKinley bill deprived them unfairly of the advantages of the reciprocity treaty made with the United States in 1876, and renewed for eight years more in 1887, under which the sugar-growing industry of Hawaii had developed and many thousands of persons had been brought from abroad to work on the plantations and had been added to the permanent population of the islands. To secure the free importation of Hawaiian sugar into the United States, the duties were taken off from American agricultural implements, iron and all manufactures of iron, cotton manufactures, and many other articles. The passage of the McKinley

bill, removing the duty from all foreign sugar, nullified the advantage secured to Hawaii by the reciprocity treaty, and injured her sugar trade to the extent of \$5,000,000 a year, as was estimated. The Hawaiian Government asked to be recompensed for this loss. The Government at Washington proposed a new treaty establishing free trade in all products between the two countries. This was acceptable, but was not regarded as an equivalent for the preferential treatment enjoyed under the old arrangement. The Hawaiian diplomatists suggested that in addition the sugar planters of the Sandwich Islands should receive the bounty of 2 cents a pound given to the planters of Louisiana. H. A. P. Carter, the Hawaiian minister at Washington, urged this view, and after he fell ill Dr. Mott Smith, a native of New York, was sent as a special envoy to Washington in November, 1891, to take up the negotiations for a modification of the treaty, and also to urge the desirability of cable communication between San Francisco and Honolulu. The Hawaiian Legislature has agreed to pay a subsidy of \$25,000 a month to a cable company, and it was desired to have the United States grant one of \$50,000 a month.

HAYTI or HAITI, a republic occupying the western end of the island known by the same name and formerly called Hispaniola, the largest but one of the Antilles. The President, according to the Constitution, which was adopted in 1867, is elected by vote of the people for seven years. The country has been so disturbed by civil wars that the President is not regularly elected, but is proclaimed by the Legislature or the troops, or, if the forms of an election are complied with, the vote is taken only in the section where his party preponderates. The legislative authority is vested by the Constitution in the National Assembly, consisting of the Senate and the House of Representatives. The members of the House of Representatives, 50 in number, are elected for three years by the direct vote of all male citizens who have a regular occupation. The senatorial term is six years. Every two years one third of the Senators, who number 30 in all, go out, and their successors are chosen by the vote of the House of Representatives from two lists of names submitted by the President and by electoral colleges. The present chief of the republic is Gen. Hippolyte, who in a sanguinary war defeated President Légitime, and was proclaimed President in October, 1889. Louis Mondestin Florvil Hippolyte, though black, is the son of one of the ministers of the Emperor Faustin I and his French wife. He was born at Cape Haytien in 1827, was educated in France, followed a military career, and distinguished himself by his defence of the fortress of Belair in the revolution of 1865.

Area and Population.—The area of Hayti is estimated at 10,204 square miles. The population was estimated by Dantès Fortunat, a native statistician, at 960,000 in 1887; others make it as low as 572,000. The people are all of African descent. The mulattoes, about one tenth of the population, constitute a distinct class, which formerly possessed all the wealth, education, and political power. The language of the common people is a corrupt French dialect, known as Creole French. Elementary education is gradu-

itous, and there are 400 state schools. The religion of the people is Roman Catholicism; all other religions are tolerated. In remote districts the people have relapsed into some of the pagan customs of Africa. In Port-au-Prince and other seaboard towns are a few white traders.

Finance.—The revenue for the fiscal year 1885-'86 was stated to be \$6,412,957, of which \$3,178,410 were derived from import duties, \$1,917,002 from export duties, and \$1,317,545 from other sources. The expenditures were equal in amount, the chief items being \$1,096,134 for war and marine, \$981,479 for the interior and police, and \$698,138 for education. The expenditures for 1887-'88 were estimated at \$4,066,236. The receipts from import and export duties in 1889 were in the neighborhood of \$6,000,000. The public debt consists of the foreign loan of 1875, of which the sum outstanding in 1887 was reported to be \$4,320,000, and \$4,450,000 of domestic liabilities, not counting the depreciated paper currency of unknown amount, the nominal issue of \$3,000,000 made after the insurrection of 1883 having been fraudulently exceeded. Other notes issued during Légitime's presidency are not recognized by the Government, which was refused an advance of \$500,000 by the foreign merchants in July, 1891, unless it would accept a part in these notes at a discount.

The Army and Navy.—The nominal strength of the army under the law to reorganize the military forces passed in 1878 is 6,828 men of all arms, including 1,978 gendarmes. The President's body guard of 650 men has for its officers the 10 generals who act as his aides-de-camp. The naval force consists of an ironclad gun vessel of 900 tons, a corvette, and two sloops, each armed with a single gun.

Commerce and Production.—The imports of merchandise in 1888 were valued at \$7,543,294, and the exports at \$13,250,307. Coffee is exported to the United States and Europe. The cotton culture, introduced by negro emigrants from the United States, was a flourishing industry during the American civil war, afterward was allowed to decay, recently has been taken up again, and for the past two or three years the cotton exports to France have been large. Cacao is also cultivated, the export in 1889 amounting to 3,927,089 pounds. Mahogany, logwood, cedar, lignum vite, and other woods are exported, as well as tropical fruits to some extent, orange peel and pickled limes, cotton seed, goat skins, honey and wax, and tortoise-shell. In spite of the civil war of 1887-'88, the export of coffee increased from 112,000,000 pounds in 1886 to 125,000,000 pounds in 1890, and other products have increased in like proportion. The export duties on coffee, cacao, and mahogany have recently been raised. The chief imports have been textile goods from England, flour and provisions from the United States, and fine manufactures from France. The chief articles of export are coffee, cotton, mahogany, cacao, and logwood, taken in the order of their importance. The imports from Hayti into the United States, according to the returns of the Treasury Department at Washington, decreased from \$3,757,443 in 1889 to \$2,421,221 in 1890, while the exports to Hayti from the United States increased from \$3,975,461 to \$5,101,464. The articles of chief importance

imported from the United States in 1890 were salt pork, flour, cotton goods, and dried and smoked fish, constituting 56 per cent. of the total, followed by soap, lumber, lard, iron manufactures, refined sugar, butter, leaf tobacco, and furniture. There were 726 vessels, of 691,150 tons, entered, and 724, of 679,902 tons, cleared at the ports of Hayti in 1887. The post-office forwarded in that year 295,013 letters and cards.

Attempted Revolution.—On the overthrow of Gen. Salomon in 1888 Gen. Manigat and Senator Légitime returned from exile as candidates for the succession. Légitime, having been chosen Provisional Executive Chief, banished Manigat again, but had to contend with a third candidate, Gen. Thélemaque, who came down from Cape Haytien with an army to Port-au-Prince and attempted to overthrow Légitime. In a fight in front of the Palais National Thélemaque was killed, and his soldiers, returning to the north and proclaiming that their general was assassinated, chose Hippolyte for their leader. A National Assembly, hastily convoked, consisting only of Representatives from the Department of the West, in which Port-au-Prince is situated, and from the Department of the South, meanwhile elected Légitime President. The northern provinces of Artibonite and of the north and the northwest were dissatisfied with the election, and the people joined the standard of Hippolyte. After a war lasting ten months, strengthened by resources supplied by American merchants and aided by the decision of the Government at Washington, which refused, unlike the French and English governments, to recognize the paper blockade proclaimed by Légitime, Hippolyte captured Port-au-Prince in August, 1889, and was elected President by the National Assembly. Légitime went into exile, and has since been conducting a plantation near Kingston, Jamaica. Gen. Manigat has also lived as a refugee on that island, and many more of Hippolyte's political enemies have fled to Kingston or to New York or New Orleans, and have kept themselves in correspondence with the discontented in Hayti, who have grown continually more numerous owing to his iron-handed rule and the corruption of his ministers. Hippolyte represented the north of Hayti, as distinguished from the south, and the Liberal party, as opposed to the National party. One of the principles of the Liberal party has been to give a share in the Government to the mulattoes, who in the course of a democratic evolution have not only lost their former dominant position, but have been excluded from the field of politics. The two parties are not divided by differences of policy. The desire for office lies at the bottom of their organization and rivalry. President Hippolyte, when he came into power, endeavored to obliterate party lines and disarm sectional jealousy as far as he could in the selection of his Cabinet. The experiment failed, and with every change he was reduced to a narrower range, thus diminishing his party and strengthening the Opposition. At Port-au-Prince he was in the midst of a hostile community. He kept several of his battalions there, and took measures to guard against revolution that trenched on the liberties of the people of the capital, who did not conceal their dislike. The discontent grew stronger and spread even in the

north, the merchants and other citizens of the capital grew bolder and more bitter in their opposition, and the exiles in Kingston and New York gave signs of fresh activity. The old President removed the battalions that were thought unreliable to distant stations, re-enforced the garrison with troops from his own section, and took more vigorous measures to prevent a rising, publicly warning the people of Port-au-Prince that he knew of their disaffection and would deal stringently with them if their sentiments should culminate in a breach of the peace. Many persons who were overheard denouncing the Government were summarily imprisoned. A plot was discovered in which Gen. Sully Guerrier was a prime mover, and among the persons arrested was that officer's wife. In the early morning of May 28 Gen. Sully Guerrier and an old political enemy of Hippolyte's entered Port-au-Prince, and before the troops could stir led a mob to the prison, secured the keys, and liberated more than 200 political prisoners. They then tried to gain possession of the arms and ammunition in the arsenal, but were frustrated by the soldiers, who put them to flight with their rifles, and cleared the streets with Gatling guns, killing about 40 persons. The rising was attempted at an hour when President Hippolyte and a large number of his subordinates and adherents were attending mass in the cathedral, as it was a high Church festival, Corpus Christi. President Hippolyte went out without hesitation to take command, and acted with such promptitude that the insurgents in less than three quarters of an hour were driven into the woods; and thus he prevented a general insurrection. From that time he did not venture to go abroad except in the middle of a square of troops. Arrests were made by the hundred, and for a month afterward prisoners were led out and shot daily by squads of soldiers. When his officers refused to continue the carnage, Hippolyte ordered the massacres continued. Several attempts were made on his life, one at Jacmel, where two of the officers of his body guard were shot. The revolutionists attempted to make a stand at this post, but could not hold it against the President's troops. A large number fled to join the conspirators in Jamaica. Among the 200 or 300 persons shot by the President's orders was a popular merchant in Port-au-Prince named Rigaud. The French Government demanded an indemnity of \$50,000 for his family, because he had applied for naturalization in France and intended going to France to gain a residence, as is required before one can be made a French citizen. The interference of a foreign government in behalf of a person who was a Haytian, not only by birth but in law, was not relished by the President. Still he gave way in the end, as is usual when foreign governments intervene. Sully Guerrier was captured and shot at the time of the *émeute*. Port-au-Prince was kept under martial law, and filled with soldiers. Business was paralyzed and social intercourse made impossible. "You call me a monster for May 28," said President Hippolyte, speaking in public, "but that was child's play compared with what I will do if another shot is fired against me." At the time of the *émeute* Gen. Souli and three others, one of them M. Cauvin, formerly Gen. Hip-

polyte's Minister of Justice, took refuge in the Mexican consulate. When the military were sent to drag them from their asylum, the diplomatic corps went to Gen. Hippolyte in a body, and the British consul, as spokesman, uttered a vigorous protest, which Hippolyte interrupted by leaving the room, saying that as President of a great country he would not listen to such language. He apologized immediately afterward, and did not remove the refugees until he had received by cable permission from President Diaz of Mexico, when all four were taken out and publicly executed, and the corpses were left for hours in the street, as was the practice of Hippolyte, in order to inspire terror in sympathizers with revolution. An insurrectionary movement in the north, led by Gen. Barnave, one of Gen. Hippolyte's aides, was soon suppressed. A more important rising among the mulattoes of the south was secretly sustained by the President's enemies in Port-au-Prince. The Kingston exiles were divided into two groups. One was headed by Gen. Anselm Prophète, who had for associates Gen. Osman Piquant, ex-President Boissard-Canal, and Gen. Badère. The chief of the rival group was Gen. François Manigat, whose allies were ex-President Légitime and Dr. T. Robert Love. Gen. Manigat is the champion of the black race against the mulattoes. Neither he nor Gen. Prophète could obtain the money to buy arms and ammunition for their threatened descent on the Haytian coast, and in September President Hippolyte felt so secure that he sent to their homes more than 1,000 of the soldiers who had been kept at Port-au-Prince since May 28. Antenor Firmin, the most prominent member of Hippolyte's Cabinet, who first held the portfolio of Foreign Affairs and Education and afterward was Minister of Finance, resigned while the massacres were in progress and left the country. Many young Haytians went abroad with the object of obtaining naturalization in France or some other country, and thus gaining the extraordinary privileges enjoyed by foreign residents in Hayti under the diplomatic protection of foreign governments.

On Aug. 14 a motion of want of confidence gave rise to a stormy debate in the Chamber of Deputies. Serious charges were uttered against the members of the President's Cabinet, and a formal vote of censure for corruption and incapacity was carried, upon which they resigned in a body. On Aug. 16 a new Cabinet was constructed as follows: M. Archin, Minister of Foreign Affairs; M. Joseph, Minister of Public Works; M. Montas, Minister of War; M. Apollon, Minister of Instruction; M. Stewart, Minister of Finance; M. Pierre Louis, Minister of the Interior. On Dec. 10 President Hippolyte proclaimed a general amnesty for all political offenders.

Disagreement with Santo Domingo.—The relations with Santo Domingo became strained when M. Firmin in 1890 denounced the commercial treaty of 1874. The treaty was to run twenty-five years. It provided for the free reciprocal importation of the products of the two countries and for a periodical adjustment of the revenues arising from the interchange of foreign goods. No adjustment was ever made. Santo Domingo's claim for a balance of \$823,477 in her favor that

accrued during the first eight years that the treaty was in force was referred to a commission, with no result. Gen. Hippolyte, in violation of the treaty, levied prohibitive duties on Dominican products and on foreign merchandise imported from Santo Domingo before the treaty was formally abrogated. His acts added to the coolness that has existed owing to the boundary dispute. In connection with the commercial convention, Santo Domingo made a treaty in 1874 binding herself not to sell, cede, or lease any part of her territory to a foreign power, thus precluding the resumption of negotiations for the acquisition by the United States of Samana Bay as a coaling station.

Relations with the United States.—While Gen. Hippolyte was at the head of the rebellion against President Légitime and was surrounded in the north by the troops of Légitime, he sent Charles Frederick Elie as his agent to the United States with a written promise that he would cede the mole of San Nicolas to the United States for a naval and coaling station provided the Government at Washington refused to recognize the blockade of the northern ports proclaimed by Légitime, which had been recognized by France, Germany, and Great Britain. Mr. Whitney, then Secretary of the Navy, sent Admiral Gherardi to Hayti, and, on the strength of his telegram to the effect that there was no blockade, the American Government refused to recognize Légitime's proclamation as establishing an effective blockade, such as is required by international law. This refusal and the action of American war ships on the Haytian coast in protecting American ships from seizure, enabled Hippolyte to land supplies and munitions purchased with money advanced by American and other foreign merchants and brought from New York in American trading vessels. A private pledge made when he was neither *de jure* nor *de facto* President, however binding on him, did not bind the Haytian Government. Frederick Douglass, who was appointed minister to Hayti by President Harrison, opened no negotiations for the cession of the mole, as they could only be conducted through the intermediation of his secretary, Ebenezer Bassett, the minister being unable to speak French. Bassett had been minister at Port-au-Prince under a former Administration, and had failed in the same matter. The firm of William P. Clyde & Co., of New York, having rendered valuable assistance to Hippolyte, was rewarded with a subsidy of \$40,000 for five years for the purpose of establishing a line of steamers between New York and Haytian ports and a ninety-nine years' lease of the mole of San Nicolas, with the understanding that the war ships of the United States, but not those of any other power, might enter the port to be established there. The jealousy of the Haytian people, quickened by French and other foreign influences, was aroused to such a degree that Hippolyte and Firmin repudiated the engagements that they had entered into as representatives of the Provisional Government, the written instructions to Elie having been destroyed, and President Hippolyte did not dare to submit to the Assembly the contract with Clyde & Co., signed in June, 1890, by which American diplomacy had sought to obtain in the guise of a commercial conces-

sion the coveted coaling station in the West Indies. These negotiations, conducted between the Haytian diplomatists and the private parties interested and in a correspondence between Mr. Blaine and J. Haustedt, Haytian consul-general at New York, having led to no result, Rear-Admiral Gherardi, with three war vessels, went to Port-au-Prince in the beginning of 1891, carrying verbal instructions from Mr. Blaine to make a formal request, in conjunction with Minister Douglass, for the use of San Nicolas mole as a naval station. Hippolyte denied ever having made a promise of the mole in return for the material and moral support he had received from the United States. Foreign-Minister Firmin temporized and dragged out the negotiations for some weeks, and on Feb. 20 asked Admiral Gherardi for written credentials, which were not forthcoming till April 18, when Admiral Walker arrived with the white squadron from Key West, bringing from President Harrison a letter of credence, dated March 9, granting Frederick Douglass and Baneroff Gherardi full power to conclude a convention for the cession of the mole of San Nicolas. As soon as it was presented Minister Firmin replied in a note absolutely refusing to enter into any negotiations for the lease of the mole, and objecting to the continued presence in Port-au-Prince of the American men-of-war. In addition to Admiral Gherardi's ships, Admiral Walker had the squadron of evolution in Haytian waters while negotiations were pending. He sailed away after they were broken off, and soon afterward Admiral Gherardi took the Squadron of the North Atlantic to Samana Bay. Minister Douglass made overtures for a treaty of commercial reciprocity, but returned to the United States on leave in July, and on the 30th of that month sent in his resignation to President Harrison. He was succeeded by Mr. Durham, another colored man.

HOLLAND. See NETHERLANDS.

HONDURAS, a republic in Central America. The Constitution, revised on Nov. 1, 1880, vests the legislative powers in a Congress containing one member for every 10,000 of population, elected for four years by direct manhood suffrage, and the executive power in a President, elected likewise for four years. Gen. Luis Bográn became President on Nov. 9, 1883, and was re-elected to serve from September, 1887. Congress meets biennially in a session lasting forty days.

Area and Population.—Honduras is next to Nicaragua the largest of the Central American republics, containing 47,090 square miles, with a population of 431,917. The largest city is Tegucigalpa, the capital, with 12,600 inhabitants. The Government gives much attention to education, providing instruction in 573 schools to 20,518 pupils in average attendance, and superior education in two universities and a number of colleges.

Finance.—The revenues of the Government are derived mainly from customs duties and monopolies. They amounted for the year 1889 to \$2,094,660, and the expenditures to \$2,077,552. The national debt, which was contracted in Europe for the purpose of building an inter-oceanic railroad running through Tegucigalpa, amounts to \$30,218,304, with accumulated interest, which has been in default since 1872. For

the financial period embracing the two years ending July 31, 1888, the expenditure on the army was \$703,783; on the debt, \$617,342; on the monopolies, \$485,500; on public works, \$384,914. The standing army is limited to 500 men. The militia, in which all can be called on to serve twelve months, numbers 26,767 men.

Commerce and Production.—The republic has an abundance of rich soil, and the climate at different elevations is so varied that plants of the tropical and temperate zones thrive equally well. The mineral resources are very great, but want of capital, difficulty in obtaining steady labor, and absence of means of transport have proved obstacles to their development. The exports for the year ending July 31, 1888, were valued at \$3,350,664 in silver, classified as mineral products of the value of \$1,673,449; vegetable products, \$1,221,716; animal products, \$367,379; gold and silver coin, \$78,853; industrial products, \$9,265. The principal articles of export are silver bars, bananas, cocoa-nuts, cattle, indigo, mahogany, gold dust, cedar, India-rubber, sarsaparilla, hides and deer skins, and various woods. The exports to the United States, with which there is communication by steamers, were \$2,790,405 in 1888; to other countries in Central America, \$331,950; to Great Britain, \$105,088; to France, \$81,566; to Belgium, \$30,345; to other countries, \$11,301. The imports are imperfectly reported, the farmers of customs having an interest in concealing their receipts. According to the official returns of the United States, the imports into Honduras of American domestic products for the year ending March 31, 1890, were \$522,621 in value, against \$618,973 in 1889, \$672,796 in 1888, and \$425,741 in 1887. The imports into the United States from Honduras are given as \$857,919 in 1887, \$959,331 in 1888, \$1,215,561 in 1889, and \$984,404 in 1890. The principal articles imported are hardware and silk and cotton goods.

Communications.—Of 69 miles of railroad from Puerto Cortez to San Pedro Sula, only 37 miles are in operation, owing to the destruction of the bridge over the river Chamelicon. Lines are projected to connect Truxillo with Puerto Cortez and with Juticalpa. The projected interoceanic railroad would run from Puerto Cortez to Amapala, on the Pacific coast. The Government owns 1,717 miles of telegraph, sending an average of 93,000 messages annually.

Political Affairs.—Honduras has suffered from the late uprising in Central America, which has left her finances in greater disorder than ever. President Bográn asked Congress, which met in the spring of 1891, to authorize a loan of \$2,000,000 for the betterment of internal affairs. A treaty was discussed with San Salvador providing for the settlement by arbitration of all difficulties between them, the free interchange of each other's products in case of war, and the use of the projected interoceanic railroad of Honduras by Salvadorean troops and of a branch that is to be built to Puerto Union by Honduran troops. This treaty was intended to isolate Guatemala in the event of a new war with Salvador. Later, Gen. Bográn was suspected of engaging in fresh schemes of Barillas for a Central American union under the hegemony of Guatemala. Gen. Ponciano Leiva, the Government candidate, was elected to succeed Bográn. The Liberal party

avored Policarpo Bonilla, who received about a third as many votes as Gen. Leiva. Congress met on Nov. 7 to canvass the returns, which were declared to be regular. The Opposition attempted to prevent the accession of Gen. Leiva by a revolutionary rising, headed by Gen. Lerencio Sierra, who attempted to occupy the department of Choluteca, where Leiva was least popular, with a force of 1,400 men. The revolutionists proclaimed Bonilla President, and the revolt was spreading when Gov. Domingo Vasequez met and defeated Sierra's force, driving the rebels over the border into Nicaragua.

HUDSON RIVER, IMPROVEMENT OF.

By an act of Congress passed in 1890 a commission was appointed to examine the obstructions to navigation in Hudson river between New York city and the State dam at Troy, N. Y., and report a project and estimate the cost of widening and deepening the river between New York and Albany, and also between New York and the State dam at Troy, for the navigation of sea-going vessels drawing 20 feet of water; and also a separate estimate of the expense of improving the river between New Baltimore and the State dam at Troy to such an extent as to secure a navigable channel 12 feet deep at mean low tide. The naturally deep waters of the Hudson begin at Coxsackie. From that point to Troy, 28 miles, navigation always has been maintained with difficulty. The river is crooked and wide, and tides, freshets, and ice-jams produce bars. The first appropriation by the State for the improvement of this portion of the river was made in 1797; but up to 1819 the depth of the channel was only 4½ feet. Between 1819 and 1863 a depth of 7½ feet at mean low tide was established. By 1885 this was increased to 10 feet, with a width of 150 feet, between Coxsackie and Albany; and 8 feet, with a width of 125 feet, between Albany and Troy. In 1888 these measurements had been increased to 11 feet and 175 feet up to Albany, and to 10 feet and 140 feet from that point to Troy. At the same time the United States Government has been aiding in the improvement of the river, having built 99,850 lineal feet of dike, against 22,400 built by the State. Although the tonnage of Hudson river is nearly three times that of the Mississippi, the amount expended in its improvement is insignificant compared with the Mississippi appropriations. The plan of deepening the upper Hudson is only one link in the chain of a system of enlarged water ways from Chicago and Duluth to New York city. The western link involves the deepening of the shallow places along the Great Lakes, so as to give a clear channel of 20 feet. The places selected for dredging are these: Sailors' Encampment, St. Clair Flats, Grosse Pointe Flats, mouth of Detroit river, foot of Lake Huron, and the shoals near Round Island. A convention of persons interested in this project met in Detroit in December, 1891. Next to the 20-foot channel, the convention considered a ship canal connecting Lake Erie with the Atlantic Ocean of most importance, and one of the resolutions requested Congress to authorize the Secretary of War to make surveys, examinations, and estimates of the cost of the various practicable routes for such a water-way. The improvement of Hudson river from Coxsackie to Troy, so that

it will be navigable for vessels drawing 20 feet of water, was strongly recommended. Other resolutions were offered, one of which proposed a ship canal to connect Lake Erie with the upper Ohio. The eastern and western links of the chain of improvement are thus agreed upon; and the construction of them only awaits aid from the United States Government; but the middle link, from Lake Erie to Hudson river, is the cause of much difference of opinion. Three plans are offered: 1. The enlargement of the whole 300 miles of the Erie Canal to a 20-foot ship canal. 2. The use of the Welland Canal, in Canada, from Lake Erie to Lake Ontario, Lake Ontario to Oswego, and the enlargement of the Oswego and Erie Canals from Oswego to Albany. 3. The building of a ship canal around Niagara Falls, on American soil, and the use of Lake Ontario and the canals beyond as in the second plan. A bill is now in the United States Senate providing for a canal around Niagara Falls, the estimated cost being \$50,000,000. The advantages of an all-water route from the Great Lakes to the seaboard are many. During the past twenty years the all-rail rate in grain has fallen from 42-6 cents to 14 cents a bushel, while the all-water rate has dropped from 25-3 cents to 4-55 cents a bushel. That is to say, freight rates by rail have been reduced in the period covered by the table until the last price named is only one third that first mentioned, but during the same time the all-water rate has been reduced to less than one fifth of the rate first named. The water rate has always been below the rail rate by a percentage ranging from 25 to 67-5. From careful records kept at the St. Mary's Falls Canal (see "Annual Cyclopædia" for 1889, page 754), it appears that the average price per ton per mile received by vessels engaged in the carrying trade of Lake Superior in 1889 was 0-15 cent; the total amount moved was 7,516,022 tons, and it was carried an average distance of 790-4 miles. The average rate on all the railways in the United States in the same year was 0-976 cent, or more than 6 times as much. In other words, to move the same amount of freight the same distance by rail would have cost in round numbers \$50,000,000 more than it cost to move it by water. Wheat has been carried from Chicago to Buffalo for 1 cent a bushel, or 0-04 cent per ton per mile, and thousands of tons of coal have been carried from Buffalo to Duluth at 25 cents a ton, or 0-025 cent per ton per mile. During the season of navigation in 1891 there was sent east from Buffalo by canal but 33,574,945 bushels of grain, and only 9,922½ barrels of flour, leaving nearly 74 per cent. of the grain and nearly all the flour to be transported by rail. Owing to the grain blockade at Buffalo in the latter part of November, 1891, there was afloat in the harbor at the close of lake and canal navigation at least 5,000,000 bushels of wheat, and at least 5,000,000 bushels more had been stored in the elevators. This left, at the close of navigation, 10,000,000 bushels to be forwarded by rail. The average freight rate on grain from Buffalo to New York by canal during the season of navigation was 4½ cents a bushel, and just before the close it was but 3½ cents. Within a day after the last canal boat had cleared, the rail rate was advanced to 7½ cents a bushel. So the Eastern consumers of flour paid \$400,000 more than would have been

charged when they had the grain been sent all the way to New York by water.

HUMAN FREEDOM LEAGUE, THE, an organization effected in Independence Hall, Philadelphia, Oct. 12, 1891, the day after the four hundredth anniversary of the discovery of America. The objects of the league are to bring about united action by all the fraternal societies in the world for the support of liberty and for the development of free institutions. In detail, the objects are these:

1. To bring about, as a permanent factor and influence in the affairs of the world, a pan-republican congress, with its work at this time defined in the report adopted April 10, 1891, at Washington, D. C., on recommendation of the Committee on Plan and Scope. This congress is to meet regularly once in five years, and is to be so organized that it can be called together in extra session on extraordinary occasions.

2. To organize into a force or influence all believers in constitutional government, in liberty regulated by law, in the voice of the people being the voice of God, in government of the people, by the people, and for the people.

3. To take up the work outlined by George Washington in his will, whereby he left a large share of his property for the purpose of endowing a university where youth might be educated in statecraft, and push it to a successful conclusion. Such a university should be national, and yet have its doors always open to youth from every land.

4. To exert what influence it can upon all educational methods and institutions, so that the opportunity of the citizens for better preparation for the duties of citizenship, as they exist in a republic, may be at its best.

5. To secure the establishment of an international court, with the same relationship to nations that the United States Supreme Court bears to the States, with jurisdiction; the acceptance by all nations of judicial principles rather than the doctrine of military force as the method for the settlement of international questions; and to accept a flag of peace, such as may be adopted by the Human Freedom League for its emblem, as representative of these ideas.

6. To do such other work in line with the foregoing declared objects, and in harmony with what is naturally suggested by the name of the organization, as shall be recommended by the committee appointed under these resolutions; provided, however, that nothing shall be undertaken except for the promotion and advancement of the cause of universal liberty and free institutions among the peoples of the earth.

Every fraternal society that believes in these principles will send delegates to the first meeting of the League, to be held at Omaha, Neb., April 10, 1892. This meeting will be preliminary to a much larger congress to be held during the time of the World's Fair, probably at Chicago, and to be known as the Pan-Republic Congress. This congress will consist of a senate and a house. The senators will be appointed by the presidents of all the republics in the world—1 delegate at large and 1 delegate for every 5,000,000 citizens. This will give the United States about 12 senators. The house will be composed of delegates from the great patriotic, civil, commercial, educational, and industrial organizations. Each of these, omitting religious organizations, shall be entitled to 1 delegate-at-large, and 1 delegate for each 100,000 members in good standing. All monarchies may be represented in the house by 1 delegate-at-large each, and 1 delegate for every 5,000,000 citizens. The League makes no distinction

because of sex, race, color, or creed. It is provided that its charter membership shall consist of the following: 1. Members of the Pan-Republic General Committee. 2. Every contributor to the funds who has supported this work up to the present time, and those who shall so contribute prior to April 10, 1892. 3. Contributors to the fund that was given by citizens of the Republic of France to present to citizens of the United States, with fraternal greetings commemorative of the Centennial period, the Statue of Liberty Enlightening the World, and the contributors in the United States to the fund for the erection of the pedestal for this statue. 4. Those persons who have been or may be nominated to membership in the Human Freedom League, by members of the General Committee on Organization of the Pan-Republic Congress previous to April 10, 1892. 5. Members of the Society of Sons of the Revolution, and of the Society of Sons of the American Revolution; Daughters of the American Revolution; Grand

Army of the Republic; Woman's Relief Corps; Sons of Veterans, United States Army; Society of the War of 1812; Confederate Veterans' Association; and all other societies which do, or shall, prior to April 10, 1892, express and declare in their fundamental laws belief in and adhesion to republican institutions, when they shall be approved of by the committee hereafter to be appointed. 6. Citizens of the different republics of the world holding office under a democratic form of government during the centennial periods, and members of all the committees that organized or carried through to success the centennial celebrations, including those of the fall of the Bastille, the French Federation, the adoption of the Polish Constitution, and the six hundredth anniversary of the Swiss Federation, together with the contributors to the supporting funds of these several celebrations. And wherever persons entitled to membership, by reason of this clause, shall have died, their rights shall be recognized in their children.

I

IDAHO, a Northwestern State, admitted to the Union July 3, 1890; area, 84,800 square miles; population, according to the census of 1890, 84,385. Capital, Boise City.

Government.—The following were the State officers during the year: Lieutenant-Governor and acting Governor, Norman B. Willey, Republican; Secretary of State, A. J. Pinkham; Auditor, Silas W. Moody; Treasurer, Frank R. Coffin; Attorney-General, George H. Roberts; Superintendent of Public Instruction, J. E. Harroun; Chief Justice of the Supreme Court, Isaac N. Sullivan; Associate Justices, Joseph W. Huston and John T. Morgan.

Finances.—The bonded State debt on July 1, 1891, was as follows: Capitol-building bonds, \$80,000; Insane Asylum bonds, \$20,000; Wagon-road bonds, \$30,000; refunding bonds, authorized by the funding act of this year, \$50,000. The two last-mentioned classes of bonds are in process of issue, the above figures representing the amount actually sold up to July 1. The total receipts of the State treasury for the half-year, ending July 1 were \$173,083, including the proceeds of \$50,000 refunding bonds sold. On the latter date the balances in the several funds of the State treasury were as follow: General fund, \$1,954.02; Capitol-building fund, \$20,359.87; Wagon-road fund, \$15,897.62; University fund, \$8,741.17; Library fund, \$1,027.09; Common-school fund, \$818.94; Insane fund, \$344.37; General School fund, \$13,530.47; unapportioned cash, \$13,151.14; total balances, \$75,824.69.

Legislative Session.—The first State Legislature, which convened at Boise City on Dec. 8, 1890, completed its sessions on March 14, 1891. On Dec. 18, pursuant to the provisions of the State Constitution and the admission act, it elected the two United States Senators to which the State was then entitled, and a third Senator, ex-Delegate Fred T. Dubois, whose term should begin on March 4, 1891, when the term of one of the other Senators would expire (see "Annual Cyclopædia" for 1890, page 425). The ballot for

Dubois was taken in joint session, although no ballot for the office had been taken in each House separately on the day preceding, as required by law, and as had been done in case of the other two senatorial offices. A few Republican members, who were opponents of Dubois, protested against this proceeding, and later attempted to set aside his election on the ground of illegality. With the aid of the Democratic minority they passed through both Houses a resolution, under which, on Feb. 10, each House separately voted for a Senator in place of Dubois. This resolution declared that great doubt of the validity of the former election existed, because it took place in advance of the time fixed by law and without a separate ballot in each House. On Feb. 11, both Houses, in joint session, finding that no choice had been made on the preceding day on the separate ballot in each House, proceeded by joint ballot to elect William H. Clagett as United States Senator, by a vote of 28 to 4 for all other candidates. Seventeen Republican members were present and refused to vote, and four were absent, but the Republican minority and the Democrats (who voted for Clagett) formed a majority of both Houses. Subsequently Acting-Gov. Willey signed the certificate of Clagett's election, but Secretary of State Pinkham refused to countersign it or to affix the State seal. Dubois had previously obtained a certificate of election signed by the Governor and the Secretary of State and duly sealed. The United States Senate must pass upon the validity of these certificates.

At this session an Australian ballot law was enacted, applying to all elections in the State except school-district elections. Under its provisions candidates may be nominated by the convention or primary meeting of any political party, or by certificates of nomination signed by electors residing within the political division for which the nomination is made to the number of at least 300, if the nomination is for a State office; to the number of at least 150 if it is for a district

office or a subdivision of the State including two or more counties; to the number of at least 50 if for a county office; and to the number of at least 10 if for a township, precinct, or ward office. Each polling place shall be provided with voting shelves or compartments, at which electors may mark their ballots screened from observation, and with a guard rail. Neither the ballot boxes nor the voting shelves shall be hidden from the view of persons outside the rail. The auditor of each county shall prepare the ballots to be used at all elections within the county, and shall print thereon the name of every candidate duly nominated; but in municipal elections the duty of preparing ballots shall devolve upon the municipal clerk. Ballots shall be white paper, printed with black ink. All the candidates of each political party shall be grouped in a column together, under the party name. The election clerk, before delivering a ballot to an elector, shall place upon the back, near the top, the official stamp. The elector shall indicate his choice by marking a cross opposite the name of the candidate voted for, or by writing in the name of a candidate. A system of registration is established by this act, and the following restrictions are placed upon the right of suffrage:

"No person shall be permitted to vote who is not registered as provided by law, or who is under guardianship, idiotic, or insane, or who has at any place been convicted of treason, felony, embezzlement of public funds, bartering or selling or offering to barter or sell his vote, or purchasing or offering to purchase the vote of another, or other infamous crime, and who has not been restored to the right of citizenship, or who at the time of such election is confined in prison on conviction of a criminal offense, or who, after passing the age of eighteen years and since the first day of January, 1888, has been or is a bigamist or polygamist, or is living or has lived in what is known as patriarchal, plural, or celestial marriage, or in violation of any law of this State or of the United States, forbidding any such crime; or who in any manner teaches or has taught, advises or has advised, counsels or has counseled, aids or has aided, encourages or has encouraged, any person to enter into bigamy, polygamy, or such patriarchal, plural, or celestial marriage, or to live in violation of any such law, or to commit any such crime, or who has been a member of, or contributes or has contributed to the support, aid, or encouragement of any order, organization, association, corporation, or society which teaches or has taught, advises or has advised, counsels or has counseled, encouraged, or aided any person to enter into bigamy, polygamy, or such patriarchal or plural marriage, or which teaches or has taught, advises or has advised, that the laws of this State, or of the Territory of Idaho before its admission as a State into the Union, or of the United States applicable to the Territory of Idaho, prescribing rules of civil conduct, are not the supreme law."

In order to fund the bonded and floating debt of the State, an act was passed authorizing the issue of 6-per-cent. State bonds, redeemable on Dec. 1, 1911, or at any time after Dec. 1, 1900, at the option of the State. The bonded debt to be refunded under this act amounts to \$51,715.06 with accrued interest, and the floating debt to

about \$76,000 with accrued interest. The *ad valorem* State tax to be levied annually for general purposes was fixed at 8½ mills on the dollar, and a further annual tax of ¼ mill was levied in aid of the State University Building fund.

A new law changes the school system in conformity with the requirements of the State Constitution, and provides for an annual tax levy in each county for support of schools of not less than 5 nor more than 10 mills on the dollar. The license law enacted at this session fixes the annual license fee for the sale of liquors at \$500 in all places where the total vote for Governor at the last election exceeded 150, and at \$300 in other places; but taverns where liquor is sold 3 miles or more outside of a village shall pay only \$100 annually. The selling or giving of liquors to minors is forbidden.

The sum of \$35,000 was appropriated for restoring the buildings of the Insane Asylum at Blackfoot, destroyed by fire on Nov. 24, 1889. For the World's Columbian Exposition at Chicago the sum of \$20,000 was appropriated, to be expended under the direction of a State commissioner appointed by the Governor and charged with the duty of securing a suitable exhibit for the State.

Aliens are now forbidden to acquire or hold any real estate in the State, except mining lands, unless such real estate shall be acquired by inheritance or by the enforcement of a lien or judgment for debt, and all real estate so acquired must be sold within five years after such acquisition or it shall thereafter escheat to the State. No restrictions are placed on the ownership of mining lands by any class of aliens, except the Chinese and other persons of Mongolian descent.

Resolutions were adopted urging the submission to the States of a constitutional amendment providing for the election of United States Senators by the people, and urging the passage of a bill permitting the free coinage of silver produced in mines of the United States.

Other acts of the session were as follow:

Creating the county of Canyon out of a portion of Ada County.

To regulate the storage of grain, flour, wool, or other produce when received for storing, shipping, grinding, or manufacturing.

To provide for the punishment of crime, for the appointment of peace officers, and to enforce section 6 of Article XIV of the State Constitution.

Establishing the State Penitentiary at Boise City, on the grounds and in the buildings occupied by the Territorial Penitentiary.

To prohibit the killing of moose within six years from the passage of this act (Feb. 6, 1891).

To define and punish crimes against the elective franchise.

Defining the duties of the State Board of Land Commissioners, and providing for the selection, location, protection, sale, rental, and general management of the public lands of the State, and for the investment of funds arising from the sale and leasing of such lands.

Repealing the act of 1889 for the suppression and prevention of contagious diseases among domestic animals.

Allowing three fourths of a jury to render a verdict in a civil action.

To authorize the organization of county mutual fire-insurance companies.

Making eight hours a day's work on all State, county, and municipal works.

Regulating the liability of stockholders in corporations.

Providing for the appointment of a county horticultural commissioner in certain cases, and prescribing his duties in destroying insect pests.

To provide for prosecuting offenses on information, and to dispense with the calling of grand juries except by order of the district judges.

Apportioning to each county the number of members of the Legislature which it shall elect.

Providing for the observance by the public schools of the Friday following the first day of May as Arbor Day.

To establish a uniform standard of weights and measures, and to provide for a State sealer and inspector.

Adopting a great seal for the State.

Providing for the organization and maintenance of a State militia.

Appropriating \$3,000 annually for the education of the deaf, dumb, and blind of the State at some institution in an adjacent State or Territory.

Establishing a State board of equalization.

To enforce section 5 of Article XIII of the Constitution, prohibiting the employment of aliens on State and municipal works.

Charities.—At the State Insane Asylum at Blackfoot, on July 1, 1890, there were 45 male and 19 female patients. During the year following 26 male and 11 female patients were admitted. The number discharged during the year was 25, and there remained on June 30, 1891, 51 male and 25 female patients. The current expenses of the institution for the year amounted to \$32,708.31. New and commodious buildings, in place of those destroyed by fire, are in process of erection.

Under the provisions of an act passed by the Legislature early in the year, arrangements were made for the education of the deaf, dumb, and blind children of the State at the Colorado State school, Colorado Springs. Late in August six children were offered the advantages of this institution.

Penitentiary.—At the State Penitentiary there were 87 convicts on July 1. The State owns a stone quarry near the prison buildings, in which the convicts find occasional employment.

Mining.—The following table, showing the production of Idaho's gold, silver, lead, and copper mines during 1890, is compiled from data collected by the Boise City National Bank:

COUNTIES.	Gold.	Silver, at \$1 an ounce.	Lead, at 4 cts. a pound.
Ada.....	\$16,000	\$500	
Alturas.....	140,000	860,000	\$240,000
Bingham.....	66,000		
Boisé.....	410,000	125,000	
Casta.....	45,000		
Custer.....	260,000	898,000	145,000
Elmore.....	200,000	18,000	
Idaho.....	485,000	87,000	
Kootenai.....	166,500	825,000	110,000
Lemhi.....	725,500	150,000	
Logan.....	75,000	550,000	125,000
Owyhee.....	651,323	325,667	
Shoshone.....	840,000	2,750,000	8,890,000
Washington.....	15,000	60,000	
Total.....	\$3,395,328	\$5,594,167	\$4,510,000

Custer County produced \$75,000 worth of copper, and Washington County \$50,000 worth, making the grand total \$13,824,500.

Irrigation.—During the year ending May 31, 1890, crops were raised in the State by irrigation on 217,005 acres, or 339.07 square miles, about four tenths of one per cent. of the area of the State. The number of farms on May 31, 1890, was 6,654, of which 4,323, or about two thirds, contained irrigated areas, the remaining third being farms in the northern counties or stock ranches requiring no irrigation. The average size of the irrigated portions of farms on which crops were raised was 50 acres. The average first cost of water right was \$4.74 an acre, and the average cost of preparing the soil for cultivation, including the purchase price of the land but excluding the cost of water right, \$10.56 an acre. The average present value of the irrigated land of the State, including buildings, etc., is reported as \$46.50 an acre, showing an apparent profit, less cost of buildings, of \$31.20 an acre. The average annual cost of water is 80 cents an acre, which, deducted from the average annual value of products, leaves a net annual return of \$12.13 an acre.

Decision.—Late in June the State Supreme Court rendered a decision pronouncing the act of 1891 purporting to create the counties of Alta and Lincoln out of the counties of Alturas and Logan to be unconstitutional, on the ground that the State Constitution forbids the division of a county and the attachment of a part thereof to another county unless the change is approved by vote of the people in the portion to be separated. The court held that the real object of the act was to add to Alturas or Alta County a portion of Logan County, the remainder of the latter being called Lincoln County.

ILLINOIS, a Western State, admitted to the Union Dec. 3, 1818; area, 56,650 square miles. The population, according to each decennial census, was 55,162 in 1820; 157,445 in 1830; 476,183 in 1840; 851,470 in 1850; 1,711,951 in 1860; 2,539,891 in 1870; 3,077,871 in 1880; and 3,826,351 in 1890. Capital, Springfield.

Government.—The following were the State officers during the year: Governor, Joseph W. Fifer, Republican; Lieutenant-Governor, Lyman B. Ray; Secretary of State, Isaac N. Pearson; Auditor, Charles W. Pavey; Treasurer, Edward S. Wilson; Attorney-General, George Hunt; Superintendent of Public Instruction, Henry Raab; Railroad and Warehouse Commissioners, Isaac M. Phillips, J. R. Wheeler, and John R. Tanner, who resigned early in October and was succeeded by Jonathan C. Willis; Chief Justice of the Supreme Court, John Scholfeld; Associate Justices, Simeon P. Shope, Alfred M. Craig, Benjamin D. Magruder, David J. Baker, J. W. Wilkin, and J. M. Bailey.

Finances.—For the biennial period ending Sept. 30, 1890, the balances, receipts, and disbursements of the several funds in the State treasury, as reported by the State Auditor, were as follow: Revenue fund, balance on Oct. 1, 1888, \$2,919,290.04; receipts for the period, \$5,367,777.30; disbursements, \$4,759,853.90; balance on Sept. 30, 1890, \$3,527,213.44. State School fund, balance on Oct. 1, 1888, \$306,224.43; receipts for the period, \$2,137,883.81; disbursements, \$2,129,852.02; balance on Sept. 30, 1890, \$314,256.22. Delinquent Land Tax fund, balance on Oct. 1, 1888, \$331.06; no receipts

or disbursements for the period. Unknown and Minor Heirs fund, balance on Oct. 1, 1888, \$13,832.60; receipts for the period, \$1,332.52; disbursements, \$409.34; balance on Sept. 30, 1890, \$14,755.78. Local bond funds, balance on Oct. 1, 1888, \$599,539.09; receipts for the period, \$2,914,341.76; disbursements, \$2,924,969.36; balance on Sept. 30, 1890, \$588,911.49. The total balances in all funds on Oct. 1, 1888, amounted to \$3,839,217.22; the total receipts for the period to \$10,421,335.39; the total disbursements to \$9,815,084.62; and the total balances on Sept. 30, 1890, to \$4,445,467.99. The receipts of the revenue fund included \$2,290,499.35 from the State tax levied in 1888, \$1,822,881.95 from the State tax levied in 1889, \$917,080.93 from the Illinois Central Railroad (being 7 per cent. of the gross earnings for two years), \$111,233.87 from the United States in aid of the Soldiers' Home, \$164,876.89 from fees of the State Auditor, and \$43,534.99 from fees of the Secretary of State. The receipts of the State School fund from the taxes of 1888 were \$1,068,898.53, and from the taxes of 1889, \$1,062,881.26. During the biennial period warrants were drawn against the revenue fund for the support of State institutions as follow: Institution for the Blind, \$104,495.20; Institution for the Deaf and Dumb, \$223,929.31; Charitable Eye and Ear Infirmary, \$57,064.08; Asylum for Feeble-minded Children, \$169,130.79; State Reform School, \$98,832.14; Soldiers' Orphans' Home, \$174,210.63; Soldiers' and Sailors' Home, \$297,761.02; Northern Hospital for the Insane, \$211,989.12; Southern Hospital for the Insane, \$269,483.02; Eastern Hospital for the Insane, \$540,002.02; Central Hospital for the Insane, \$347,796.70; Northern Normal University, \$58,987.12; Southern Normal University, \$53,057.50; University of Illinois, \$78,588.67; National Guard, \$190,764.

The bonded State debt on Jan. 1, 1891, was \$19,500, on which interest has long since ceased. Bonds to the amount of \$3,600 were paid and retired in January, 1890.

Valuations.—The total valuation of property in the State for 1890, as equalized and assessed by the State Board, was as follows:

ASSESSED IN COUNTIES.	
Personal.....	\$142,201,091
Lands.....	381,156,217
Lots.....	255,889,169
BY STATE BOARD.	
Railroad property.....	72,974,896
Capital stock.....	6,671,909
Total.....	\$808,892,782

The total equalized value of property assessed for 1889 was \$792,197,542, the increase for 1890 being \$16,695,240. Included in the assessment for 1890 were 1,108,376 horses, valued at \$25,450,732; 2,372,475 cattle, valued at \$15,244,712; 93,901 mules, valued at \$2,200,813; 631,842 sheep, valued at \$646,382; 2,637,268 hogs, valued at \$3,656,028. The total equalized valuation of Cook County was \$240,808,050, of which the value of railroad property was \$12,075,785; of corporation stock, \$4,719,195; and of property assessed by the local assessors, \$223,513,070.

The rate of State taxation for 1890 was 2-25 mills for general purposes and 1-35 mill for school purposes. For 1891 it was 2 mills for general purposes and 1-3 mill for schools.

Legislative Session.—The regular biennial session of the General Assembly began at Springfield on Jan. 7, and adjourned on June 12. A prolonged contest over the choice of a successor to United States Senator Charles B. Farwell marked the early months of the session. In this contest the Democrats controlled the House and cast 101 votes on joint ballot; the Republicans controlled the Senate and had 100 votes on joint ballot, while the balance of power was held by 3 members of the Farmers' Mutual Benefit Association, a local organization similar in purpose to the Farmer's Alliance. The Democrats had but one candidate throughout the struggle, Gen. John M. Palmer, whose candidacy had been approved by the Democratic State Convention of the preceding June. For the Republican nomination there were several candidates, including Senator Farwell. Out of these the Republican caucus on Jan. 15 selected on the first ballot ex-Gov. Richard J. Oglesby, the vote standing: Oglesby, 64; Farwell, 30; Walter Q. Gresham, 4; scattering, 2. Neither Palmer nor Oglesby was acceptable to the Farmers' Mutual Benefit Association members, and they accordingly decided to give their support to Alson J. Streeter, hoping that one of the leading parties would finally be compelled to support him. On the first ballot in the General Assembly, on Jan. 20, the following vote was cast: Senate, Palmer 24, Oglesby 27; House, Palmer 77, Oglesby 73, Streeter 3. For several weeks there was no change in this vote, but toward the middle of February the Republicans became convinced that the three Association members could not be induced to support their candidate, and they therefore abandoned him. Then followed a long series of negotiations with the three Association members and with Streeter, as a result of which the Republican leaders undertook to transfer the party vote to Streeter. But this plan was foiled by a few members who resolutely refused to be supporters of Streeter, claiming that they had been elected to vote for a Republican candidate and for none other. They adhered to this purpose through a long series of ballots, and the contest appeared no nearer settlement than at the beginning, when, on the 154th ballot, on March 11, two of the three Association members, Moore and Cockrell, suddenly transferred their support to Palmer, and gave him the 103 votes necessary to elect. On this final ballot, Palmer received 103 votes, Cicero J. Lindly 100, and Streeter 1. Messrs. Moore and Cockrell published a long manifesto giving various reasons for their change of position.

The legislative work of the session includes an act, passed after long discussion, by which the members of the State Board of Agriculture are constituted and appointed *ex-officio* members of the Illinois Board of World's Fair Commissioners, and are authorized to secure a suitable exhibit of the resources and institutions of the State at the Columbian Exposition. The sum of \$800,000 is appropriated to carry out the provisions of the act, one tenth of which is placed at the disposal of the Illinois Woman's Exposition Board, composed of four women appointed by the Governor and the two Illinois women on the national commission.

A ballot-reform act provides for printing and

distributing at public expense all ballots in every election for public officers, except for trustees of schools, school directors, members of boards of education, and officers of road districts in counties not under township organization. In municipal and town elections the expenses of providing ballots shall be borne by the cities, villages, and towns, and in all other elections by the counties. Candidates for office may be nominated by any convention, caucus, or meeting representing a political party which, at the general election next preceding, polled at least 2 per cent. of the entire vote cast in the State or in the division thereof for which the nomination is made. Nominations may also be made by nomination papers signed by a certain number of qualified voters. The names of all candidates to be voted for shall be printed on one ballot, all nominations of any political party or group of petitioners being placed under the party appellation or title. On the back of each ballot, so as to appear when folded, shall be printed the words "Official ballot," followed by the name of the polling place, the date of the election, and the *fac simile* signature of the clerk or other officer preparing the ballots. Plain white paper, through which the printing or writing can not be read, shall be used for ballots. Each polling place shall be provided with voting booths, not less than one for each one hundred voters at the last election, in which voters may prepare their ballots screened from observation. No person other than the election officers and the challengers allowed by law and those admitted for the purpose of voting shall be permitted within the guard rail, except by authority of the election officers to keep order and enforce the law. On receipt of his ballot the voter shall retire alone to one of the voting booths and shall prepare his ballot by making a cross opposite the name of the candidate of his choice, or by writing in the name of the candidate of his choice in a blank space on the ticket, making a cross opposite thereto: Provided, however, if he shall desire to vote for all the candidates of one political party or group of petitioners, he may place such mark before the appellation or title under which the names of the candidates of such party or group of petitioners are printed, and the ballot so marked shall be counted as cast for all of the candidates named under that title: Provided, further, that the voter may place such mark at the appropriate place preceding the appellation or title of one party or group of petitioners, and may also mark, at the appropriate place preceding the name or names of one or more candidates printed under the appellation or title of some other party or group of petitioners, and a ballot so marked shall be counted as cast for all the candidates named under the appellation or title which has been so marked, except as to the officers as to which he has placed such mark preceding the name or names of some other candidate or candidates printed under the title of some other party or group of petitioners, and as to such it shall be counted as cast for the candidate or candidates preceding whose name or names such mark may have been placed. Before leaving the voting booth the voter shall fold his ballot in such manner as to conceal the marks thereon. Employés shall be allowed two hours on election day for

the purpose of voting without loss of pay. Voters who, from physical disability, are unable to mark their ballots, may be assisted therein; but intoxication shall not be regarded as a disability.

By another act numerous changes were made in the law regulating registration in cities. Still another act grants to women the right to vote for school officers at all elections.

The legal rate of interest, where none other is stipulated, was reduced from 6 to 5 per cent., and the highest rate allowable by agreement was reduced from 8 to 7 per cent. All contracts stipulating for more than 7 per cent. interest were declared usurious, and no interest can be collected thereon.

An act was passed requiring every manufacturing, mining, quarrying, lumbering, mercantile, street, electric, and elevated railway, steamboat, telegraph, telephone, and municipal corporation, and every incorporated express company and water company to make weekly payments of wages to its employés. It was declared unlawful for any person or company engaged in mining or manufacturing to keep or be interested in any truck store, or to control any store, shop, or scheme for furnishing supplies, tools, provisions, or groceries to employés. No deductions shall be made by any employer from the wages of his workman, except for money actually advanced, or such sums as the workman may agree upon to aid relief funds for sick or injured workmen.

A stringent act was passed for the suppression of pools, trusts, and combines.

For each of the years 1891 and 1892 the amount to be raised by taxation for general State purposes was fixed at \$1,500,000, and for school purposes at \$1,000,000.

The employment of children under thirteen years of age by any person, firm, or corporation was strictly forbidden, unless it shall appear to the school authorities in any particular case that the labor of the child in question is the means of support of an aged or infirm relative, and that such relative is in whole or in part dependent upon such child.

The sum of \$163,000 was appropriated for a building to accommodate 300 additional patients at the Eastern Hospital for the Insane. The Reform School at Pontiac was remodeled and established as a State Reformatory, the sum of \$150,000, being appropriated for additional buildings, etc.

The compulsory school law remained unchanged, after long discussions and repeated attempts to repeal or change it.

Other acts of the session were as follow:

Authorizing the payment of a bounty of two cents a head for English sparrows.

To provide for the examination of mine managers.

Amending the fish law so as to prohibit seining, catching, or killing fish by other device than hook and line.

Amending the act of 1887 forbidding alien ownership of land, by providing that any alien who has by deed acquired or shall acquire title to land contrary to this act shall have power to convey a good title to a citizen of the United States, or to encumber the same in favor of a citizen, and a judgment or decree against such alien shall be a valid lien against such land, if such deed, encumbrance, judgment, or decree shall be made, executed, or entered before any legal

proceedings are taken to seize said land in behalf of the State. Deeds, encumbrances, or decrees heretofore made in favor of any citizen of the United States are legalized.

Limiting the amount of land that may be held by cemetery associations to twenty acres.

Requiring annual reports to the State Auditor of the condition of each building, loan, and homestead association, and providing for investigation into their affairs.

To punish persons unlawfully wearing the badge or emblems of the Grand Army of the Republic.

To punish bailees who fraudulently convert property to their own use.

Repealing the act of 1887 further defining conspiracy.

Providing a penalty for docking the tails of horses.

To punish persons selling, giving, or furnishing intoxicating liquor to minors without the written consent of parent or guardian or to drunkards.

To prevent oppressive garnishment and the transferring of claims for the purpose of depriving debtors of their exemption rights.

To prohibit foreign insurance companies from doing business in the State unless possessed of a cash surplus of \$200,000.

To prohibit discrimination by life-insurance companies between insureds of the same class and equal expectation of life, in rates, premiums, rebates, dividends, and other benefits.

To establish the validity of marriages wherein one or both of the parties were slaves at the time of marriage, and to establish the legitimacy of their offspring as to the right to inherit property.

Making the first Monday in September, to be known as Labor Day, and the twelfth day of February (Abraham Lincoln's birthday) legal holidays.

To authorize the corporate authorities of towns to issue bonds for the completion and improvement of public parks and boulevards, and to provide a tax for the payment of the same.

To give cities, incorporated towns, townships, and districts in which free schools are now managed under special acts authority to elect boards of education having the same powers as boards of education elected under the general free-school laws.

Assenting to the act of Congress appropriating a portion of the proceeds of public-land sales to the endowment and support of colleges of agriculture and the mechanic arts in the several States; and designating the University of Illinois as the Illinois beneficiary under that act.

Fixing the weight of a bushel of sweet potatoes at fifty pounds.

Declaring that United States Senators ought to be elected by a direct vote of the people.

Coal.—The State contains much the larger portion of what is known as the Central Coal Field, covering about 37,000 square miles and underlying 60 counties, in 45 of which operations are conducted on a commercial scale. The Illinois field contains 15 distinct seams. Those which are available for commercial mining generally lie at considerable depth. Coke is manufactured to a limited extent in Gallatin and La Salle Counties, but elsewhere in the State the coal does not yield a marketable coke. The statistics of coal production for the year ending July 1, 1890, are summarized as follow: Number of counties in which coal has been mined, 57; mines and openings of all kinds, 936; tons (2,000 pounds) of lump coal mined, 12,638,365; employés of all kinds, 28,574; value of product, \$12,893,936. The aggregate output for the year is 1,040,401 tons greater than for the year preceding, and the average value per ton at the mines has declined from \$1.07 to \$1.02; the

average price of mining for the State at large has also declined from 73 cents to 68 cents a ton. The number of employés of all kinds is smaller than that reported for the preceding year, but there has been an increase of 31 in the number of machines used, and of half a million tons, or 23 per cent., in the amount cut by machines.

State Banks.—On June 1 of this year there were 68 banks doing business under the State banking law. On that day the aggregate amount of capital stock and surplus fund of these banks was \$17,291,279.68; the aggregate of loans and discounts, \$55,315,470.40; of cash and reserve, \$18,191,842.45; of individual profits, \$2,131,224.39; of deposits, \$61,547,888.93; and of total resources, \$81,286,740.98.

Mortgage Debt.—According to the Federal Census, the real-estate mortgage debt of the State in force Jan. 1, 1890, was \$384,299,260, of which 43-01 per cent. was on acre tracts, and 56-99 per cent. on village and city lots. The debt of Cook County was \$191,518,209, of which \$14,065,305 was on acre tracts and \$177,452,904 on lots. The *per capita* debt of Illinois is \$100.

INDIA, an empire in Asia, subject to Great Britain. Besides British India proper, large territories ruled by native princes have been brought under the suzerainty and control of the Indian Government, which derives its powers from the Parliament of Great Britain. By the act of 1858 for the better government of India the powers and functions of the Board of Control of the East India Company were transferred to the Secretary of State for India. The executive authority in India is exercised by a Governor-General, often called the Viceroy. Laws and regulations are prepared by the Council of the Governor-General, containing five ordinary members, who preside over the Departments of Finance, the Interior, Revenue and Agriculture, Legislation, and Military Administration. The Governor-General has personal charge usually of the Department of Foreign Affairs, and that of Public Works may be represented in the Council at the option of the Government. The commander-in-chief is almost invariably asked to assist as an extraordinary member, and when the Council sits in Madras or Bombay the Governor of the presidency takes part as an extraordinary member. For legislative purposes the Council is augmented, six to twelve additional members being appointed by the Governor-General. The Secretary of State is assisted in conducting business in Great Britain connected with the Government of India by a council of not fewer than ten members. The Governors of Madras and Bombay have each a separate army and civil service and a Legislative Council, and the Lieutenant-Governors of Bengal and the Northwest Provinces have legislative councils.

Area and Population.—The area of the territory under direct British administration is 1,064,720 square miles, containing in 1891 a population of about 220,000,000, an increase of 21,000,000 since the last previous census taken in 1881, which showed an advance of only 7,000,000 in the preceding decade. The difference in the rate of increase is due partly to annexations, the area taken account of in 1881 having been 868,314 square miles. The annexed province of Upper Burmah has a population of over 2,500,-

600, exclusive of 500,000 in the tributary Shan States and 100,000 Chins, Kachyens, and Karens. The population of Lower Burmah has increased from 3,730,000 to 4,430,000, or at the rate of 18½ per cent. The total population of the immediate British possessions in 1891 was 220,584,000, and of the native states 69,148,000. Bengal had 70,909,260; Northwest Provinces, 46,922,690; Punjab, 20,803,000; Madras, 35,588,850; Bombay and Sindh, 18,825,080; Central Provinces, 10,761,630; Rajputana, 12,089,330; Hyderabad, 10,658,930. In Bengal, with 426 inhabitants to the square mile, the birth rate is lower than the death rate, 20·63 and 22·94 per thousand respectively in 1883-'89. The death rate has varied between 20·98 per thousand in 1880 to 25·74 in 1888. In 1889 it ranged from 17·30 in Mysore to 30·08 in the Northwest Provinces. The birth rate was 41·52 in the Central Provinces, 38·57 in Bombay, 38·25 in the Northwest Provinces and Oudh, 37·32 in the Punjab, and 29·90 in Madras. The number of coolie emigrants from India in 1889 was 10,388, against 6,451 in 1888. Anthropometric researches conducted for the Bengal Government by Herbert Risley confirm the conclusion that caste and social distinctions in India are based on differences of race; that, apart from the Mongoloid intermixture in the northeast, there are two races—(1) the aboriginal or Dravidian, with thick lips, broad noses, low facial angle, dark skins, short stature, and squat figure; and (2) the Aryan, tall, slender, with remarkably fine noses and dolyccephalic skulls, and regular features. A regular gradation of these characteristics is observed in the hierarchy of castes from the Brahmans and Sikhs down to the casteless forest tribes. A man's social status varies approximately inversely with the width of his nose. The largest cities of India are Calcutta, the seat of the General Government, with 750,000 inhabitants; Bombay, 804,464; and Madras, 450,000. The population of Bengal increased from 69,500,000 in 1881 to 74,000,000 in 1891, or at the rate of 6¼ per cent.

Finances.—The revised estimates of revenue under the various heads for the year ending March 31, 1890, and the budget estimates for 1890-'91 were, in tens of rupees, as follow:

REVENUE.	1889-'90.	1890-'91.
Land revenue.....	28,817,300	28,574,400
Opium.....	8,546,400	8,208,300
Salt.....	8,192,500	8,238,500
Stamps.....	4,060,500	4,084,900
Excise.....	4,837,400	4,841,500
Provincial rates.....	3,345,500	3,849,400
Customs.....	1,487,300	1,561,100
Assessed taxes.....	1,567,100	1,558,700
Forests.....	1,446,400	1,414,400
Registration.....	846,700	845,500
Tribute.....	777,400	776,200
Interest.....	567,700	789,900
Post-office, telegraphs, mint.....	2,899,700	2,428,400
Civil departments.....	1,518,700	1,521,500
Miscellaneous.....	1,825,500	1,243,000
Railroads.....	16,508,300	17,151,400
Irrigation.....	1,985,300	2,035,000
Buildings and roads.....	649,200	589,400
Military departments.....	1,022,100	982,600
Total revenue.....	84,636,300	84,982,100

The expenditure under each head as set down in the revised estimates for 1889-'90 and the budget for 1890-'91 reaches the following amounts, in tens of rupees:

EXPENDITURES.	1889-'90.	1890-'91.
Interest.....	4,262,300	4,396,300
Refunds, compensation, etc.....	1,790,400	1,782,600
Cost of collection.....	7,224,100	8,042,500
Post-office, telegraphs, mint.....	2,205,100	2,228,600
Civil salaries.....	13,282,500	12,596,600
Miscellaneous civil charges.....	4,848,700	4,945,400
Famine relief and insurance.....	605,500	600,000
Railroad construction.....	5,860	4,800
Railroad revenue account.....	18,406,900	19,017,900
Irrigation.....	2,799,800	2,789,400
Buildings and roads.....	5,389,400	5,717,300
Army.....	20,638,600	21,505,100
Defense works.....	758,400	892,300
Total.....	82,474,100	85,419,400

To arrive at the true total of expenditure for 1889-'90 Rx 352,500 must be added to the estimate, being the balance due the Imperial Government in the adjustment of accounts with the provincial administrations, making the total charged against revenue Rx 822,826,600, while for 1890-'91, Rx 757,700 of provincial balances should be deducted, reducing the net estimate for that year to Rx 84,661,700. The estimates for 1889-'90 and the actual receipts and expenditures varied very slightly, the surplus amounting to Rx 2,612,000, or Rx 65,000 less than was predicted. In 1890-'91, instead of the expected surplus of Rx 270,400, there was a surplus at the end of the year of Rx 3,665,000. The improvement in the rate of exchange, due to the rise in the price of silver brought about by legislation in the United States, accounts for Rx 2,544,100 of the difference. In the receipts for the year there was a falling off in the opium revenue, and provincial contributions ceased, but the land revenue increased by Rx 307,200. There was an increase in various branches of expenditure. The total revenue for 1888-'89 was Rx 81,696,678, and the expenditure Rx 81,659,650. The budget estimates for 1891-'92 show an increase on these figures of Rx 2,408,000 in revenue and Rx 2,329,000 in expenditures. The expected surplus is Rx 396,000. There will be a further falling off in the opium revenue, a much smaller crop having been grown in Bengal. A further increase of Rx 370,000 in the land revenue was looked for. Since 1889 it has increased by Rx 1,010,000, while the decrease in the opium revenue has been Rx 646,000. While expenditure for the army and similar imperial purposes has grown less, more is spent on public works and local improvements, causing the disappearance of the grants from provincial revenues. To meet the extraordinary military expenditure determined on in the face of the financial strain caused by the fall of the rupee, the provincial governments, by the arrangement of 1887, have yielded up very large sums to the Central Government. Another important act of restoration is the replacing of the Famine fund. For the first time since 1886 the full appropriation of Rx 1,500,000 is set aside for famine relief and insurance. The interest on the debt has decreased by Rx 810,000 and the railroad revenue account by Rx 732,000 since 1889. The interest on the money borrowed in England to build the railroads is payable in gold, and consequently they have been worked at a loss for many years. But for the fall of the rupee there would have been a considerable profit.

The people of India are discontented with the military expenditures, from which they derive no benefit, and which have increased enormously within a recent period, and with the general expensiveness of the Indian Government and the grinding and unjust taxation to which they are subjected. The salt tax has been successively raised until it is five times as great as it was in the early part of the century, amounting to sixteen times the cost of production. The consequence is that many poor people must take their food without salt. The military expenses are twenty times as great as the expenditure on education, and the pension list of the Indian army is proportionately the heaviest in the world, amounting to £4,250,000. The Hindus complain that the licensing of opium shops is conducted in a way to force the consumption of the drug on the people, and that the excise laws have encouraged the spread of the drinking habit, although in quite recent years a better supervision has enabled the Government to collect more revenue from alcohol and at the same time to diminish the number of stills and drinking shops, narrowing the producers and sellers down to a limited number of large distillers and licensees who can be watched. Opium is manufactured by the Government, and is grown in the native states of Malwa and in Bengal, where no one can cultivate the poppy without a license. The gross revenue from opium in 1890 was Rx 8,500,000, and the net revenue Rx 5,500,000. The production and the revenue have diminished chiefly because of the extension of poppy cultivation in China. The land devoted to the poppy in Bengal in 1890 was 100,000 acres less than in 1880, and the quantity of the drug manufactured in British India had fallen from 5,606 to 4,800 chests. The Government is accused of having endeavored to stop the decline in the revenue by encouraging the smoking of opium in India, and deliberately introducing it into Burmah, where, in the reign of Thebaw, it was death to sell opium. Under British rule the consumption of the narcotic has become alarming, and the people are visibly impoverished and demoralized thereby. On April 10, 1891, Sir Joseph Pease, a member of the Temperance party in England, moved in the House of Commons a resolution declaring the system by which the opium revenue is raised morally indefensible, and urging upon the Indian Government that it should cease to grant licenses for the cultivation and sale of opium, and take measures to arrest the transit of Malwa opium into Indian territory. Members of the Government endeavored to refute the assertion that Great Britain had waged wars to force the opium traffic on the Chinese. Sir J. Ferguson said that China was free under the Chefoo convention to impose any tax she chose on Indian opium or to exclude it entirely, and declared that if the Chinese thought proper to place a prohibitive duty on it, Great Britain would not "expend a sovereign or provide a soldier or the cost of a single gunshot to force it upon them." The attendance was slim, and when the House divided 160 members went into the lobby with Sir Joseph Pease, while the Government had only 130 supporters present. War, famine, a further fall in the price of opium, decreased railroad traffic, military armaments, and a fall in the rate of exchange

are contingencies that may interfere with the realization of the budget estimates for 1891-'92, in which the revenue is calculated at Rx 85,313,500, and expenditure at Rx 82,526,000, reckoning the rupee at 1s. 5½d. The rate of exchange affects not only the regular expenditure of the Indian Government in Great Britain, which amounted to Rx 21,954,657 in 1889, but also the interest payable in gold on the Indian railroad bonds. The actual and expected action of the American Congress caused the price of silver to rise in 1890-'91 from 43½d. an ounce to 54½d., and then to fall again to 45d., corresponding to the rate of exchange anticipated for 1891-'92. Before 1873 the rupee was practically worth its nominal value of 2s., but for many years it has remained below 1s. 5d.

In addition to the expenditure charged against revenue, there was a capital expenditure for public works of Rx 3,461,800 in 1889-'90, and Rx 3,750,000 in 1890-'91. The public debt of British India in 1889 amounted Rx 206,619,559; the permanent debt in India being Rx 100,879,742, the permanent debt in England Rx 95,033,610, and the unfunded debt in India Rx 10,706,207.

The Army.—The Penjdeh incident and the conquest of Upper Burmah, bringing India into contact with Russia and China, led to a great reorganization and extension of the Indian defenses, the notable results of which are the fortification of the northwestern frontier and a line of strong places farther back, a network of railroads and military roads giving access to the frontier, and a large addition to the European and native army. The coast defenses have also been improved, and the principal harbors protected by submarine mines and torpedo boats. The frontier railroads, which are the most expensive part of the new defenses, having been practically completed according to programme, Sir Frederick Roberts, commander-in-chief, and Sir George Chesney, military member of the Council, have worked out a plan for the general rearmament of the troops, the European infantry with the new British magazine rifle, the native infantry with Martini-Henry rifles having the same bore, which is 303, the cavalry with a new carbine, the field artillery with breech-loading 12-pounder cannons in part mounted on hydraulic-buffer carriages, and the siege artillery with 4-inch and 5-inch breech-loading guns with hydraulic gear that can be anchored down, and with the new howitzers not yet furnished to the British army. The turret-ships are to have 10-inch breech-loaders and torpedo catchers. The military expenditure rose from under £18,000,000 average during the three years ending with 1885 to over £20,000,000 a year in the succeeding four years, besides £1,500,000 annually for special defense works for three years of the four. In 1890 the expenditure was £21,000,000, taking the rupee at the conventional rate of ten to the pound sterling. The necessity of frequently rearming the Indian troops and extending the defense works, and the constant danger of war are a perplexing feature in Indian finance. While the British forces have been greatly strengthened at the cost of new burdens on the impoverished people, a change in the policy of the Government toward the feudatory states has either added greatly to the defensive

power of the empire or possibly introduced a serious element of danger. Instead of treating the standing armies of the native princes as a menace, the attitude of hostile watchfulness has been abandoned, and these armies, making an aggregate of 350,000 men, are being trained and fostered by the British in the expectation that they can be utilized as a fighting force for the defense of India in the event of a war with Russia. Corps of picked men in many of the states, hereditary soldiers commanded by native princes and nobles, numbering in the aggregate 25,000, are equipped with modern weapons and instructed by British officers as a reserve force to co-operate with the Indian army in war. A scheme to open a career for the native chiefs and nobles of Bombay, the Punjab, and other provinces of British India by educating them in military colleges is regarded as a political necessity; but Sir Frederick Roberts has resisted the proposal, because British soldiers will not serve under native officers, and the Sepoys, who are recruited from the military races, would lose in efficiency if young native officers from military schools were placed over them and their native officers who have won promotion by service. In June, 1891, Gen. Brackenbury succeeded Sir George Chesney as military member of the Council, and in October, Sir Frederick Roberts retired, and was succeeded by Maj.-Gen. Sir George White, who commanded the field force in Burmah from 1886 to 1889, and has since been in command in Beluchistan.

The established strength of the European army for the year 1890-'91 was 3,527 officers and 69,843 men, or in all 73,370, comprising 12,723 artillery, 5,679 cavalry, 254 engineers, 53,701 infantry, 793 on the staff, and 220 unemployed officers, etc. The native army numbered 1,576 European officers, 2,760 native officers, and 140,369 rank and file, making 144,705 altogether, comprising 3,757 artillery, 23,547 cavalry, 3,872 sappers and miners, and 113,529 infantry. The total present strength of the army was thus 218,075. Of the European troops, 46,322 were in the army of the Governor-General, 13,096 in the Bombay army, and 13,949 in the army of Madras. The Eurasian volunteers reported as efficient in 1889 numbered 17,500. The exact strength of the feudatory armies in 1884 was 349,835 men, with 4,237 guns. Of the native auxiliaries in the feudatory and independent states placed at the disposal of the Indian Government for war purposes and inspected by British officers, 4,000 belong to Cashmere, 600 cavalry and 1,000 infantry to Patiala, 150 cavalry and 300 infantry to Bahawalpur, 150 cavalry and 600 infantry to Jhind, 150 cavalry and 600 infantry to Kapurthala, 50 cavalry and 150 infantry to Faridkot, 50 cavalry and 150 infantry to Maler Kotla, 800 cavalry and 600 infantry to Bhurtpore, a camel corps of 500 men to Bikanir, 1,000 cavalry and 600 infantry to Ulwar, and 1,200 cavalry to Jodhpore. The two armored turret ships belonging to the Indian Government are the "Abyssinia," of 2,908 tons, armed with four guns, and the "Magdala," of 3,344 tons, carrying the same number of guns. The British naval force in East India numbered 14 ships of war in 1890, besides 18 on the China station.

Production.—More than 90 per cent. of the inhabitants of India are dependent on agricult-

ure. The land belongs to the Government, and is leased either to *zemindars* or village communities for the whole period of the settlement or directly to the ryots or cultivators, who may vacate their land after notice given at the end of any year. In Bengal the *zemindars* were made virtual proprietors of the soil by a permanent settlement made by Lord Cornwallis. In other parts of India there is a resettlement of the land rent or tax every thirty years, and consequently the cultivators are tempted to exhaust, rather than to improve, the land, because their improvements are made the basis of a higher assessment. There is an agricultural department established by the Government in every province to instruct and advise the farming class regarding rotation of crops, new staples, breeding of animals, implements, fertilizing, etc. The area under wheat in 1889 was 19,170,013 acres, of which over 7,000,000 acres were in the Punjab, 3,500,000 in the Central Provinces, nearly the same in the Northwest Provinces, and large areas in Bombay, Oudh, and Berar. The rice area was 26,810,806 acres, scattered over Madras, the Northwest Provinces, Lower Burmah, the Central Provinces, Oudh, Bombay, and other provinces. The area devoted to other food grains was 76,178,925 acres, exclusive of Bengal, which made no returns. The tea plantations covered 241,077 acres, of which 216,676 were in Assam. Cotton was raised on 9,215,464 acres in Bombay, Berar, Madras, the Northwest Provinces, and other districts. There were 7,381,811 acres devoted to oil seeds, 998,217 to indigo, chiefly in Bombay and the Northwest Provinces, and 347,769 to tobacco.

The forest reservations in 1889 covered 19,712 square miles in the Central Provinces, 10,236 in Bombay, 5,111 in Lower Burmah, 4,998 in Bengal, 3,727 in Madras, 3,727 in the Northwest Provinces and Oudh, 3,447 in Assam, 1,535 in the Punjab, and 1,059 in Berar. There were 108 cotton mills in 1889, with 22,156 looms and 2,669,922 spindles, employing 92,126 persons. The jute mills employed 59,722 persons.

The area under food grains during the six years ending with 1890 increased from 112,085,401 to 119,600,465 acres, equal to 6·7 per cent., while the exports of food grains increased 8·8 per cent. J. E. O'Connor, the Government statistician, in his report on foreign trade for 1890-'91, takes pains to refute the opinion conceived by friends of India that the country by its large exportation of rice and wheat denudes itself of food supplies. The exports of food grains in 1890-'91 were 51,049,000 hundred-weight, against 42,416,000 hundred-weight in 1888-'89. Still, they were only a small fraction more than in 1887, and very little greater than in 1886, 1884, and 1882, and they would not have exceeded the average except for an extraordinary demand for Burmah rice to supplement a deficient crop in Japan. The rice area in the six years ending with 1890 increased 26 per cent. and the exports 23 per cent. In the same period there was a decrease of 13 per cent. in the wheat exports and of 6·6 per cent. in the acreage. The exports in 1886 were the largest ever known. In 1891 the area in wheat was 1,651,000 acres more than in 1890, and in the first five months of 1891-'92 the shipments from Bombay, brought out by high prices consequent on the failure of the

French crop, were greater than in any similar period since the beginning of the wheat trade in 1874, and two thirds greater than during the same part of the preceding year. In 1891 a deficient rainfall in Madras caused a partial famine. More serious distress occurred in Upper Burmah, where the failure of the monsoon, following on a series of lean years, drove the people to eat the seed grain, sell their plow cattle, and migrate in large numbers. The Commissioner ordered relief works, especially the repairing of the irrigation canals, which since the English occupation have been allowed to become useless.

The Manchester cotton manufacturers brought sufficient influence to bear on the British Government to secure the abolition of the Indian import duties on cotton goods when the development of the mills of Bombay began to interfere with the imports of Lancashire cottons into India. This action of the Indian Government failed to crush the new Indian industry, and therefore in 1891 another attack was made upon it by the friends of the powerful English milling interest in Parliament, who proposed that the principles approved by the Berlin Labor Conference should be carried out in Indian factories, although they successfully obstructed the enactment of the laws recommended by the Berlin Conference in Great Britain, preventing the Government from fulfilling an international engagement to which it was distinctly pledged. The Indian Government appointed a commission to inquire into the conditions of factory labor. A new factory act was passed which satisfied some of the demands of the British competitors by raising the age of children who may be employed from seven to nine and the adult age from twelve to fourteen, restricting the labor of women to eleven hours, and requiring complete rest on Sunday, unless a holiday occurs within three days. The efforts that have been made to create a demand in Europe for Indian art work have not been very successful. The project of having an official assay of silverware to satisfy the requirements of English purchasers is regarded by the Indian authorities as desirable only if it be made optional. Obligatory hall-marking would destroy the industry intended to be benefited, as the system of family labor by which the art is preserved precludes the use of silver of uniform fineness. The art of silk weaving in Assam and other parts of India, wood carving, and other arts have become or are becoming extinct, only a few families are still engaged in ivory carving, inlaying metal work, or making the pictured silk of Moorshedabad. The filigree work of Dacca and Cuttack and other jewelry work alone maintains its high standard in Bengal.

Commerce.—The sea-borne foreign trade of India for the year ending March 31, 1890, consisted of Rx 86,656,990 of imports, and Rx 105,367,720 of exports of merchandise and treasure on both Government and private account. The imports of merchandise amounted to Rx 69,197,489, and of treasure to Rx 17,459,501; the exports of merchandise to Rx 103,460,398, and of treasure to Rx 1,907,392. Excluding Government stores and treasure, the imports of merchandise were Rx 66,560,120, and of treasure Rx 17,459,301, making a total of Rx 84,019,421; and the exports of domestic and foreign merchandise were

Rx 103,096,862, and of treasure Rx 1,841,920, a total of Rx 105,238,782. The domestic exports amounted to Rx 99,101,054. Of the imports on private account, Rx 26,314,803 were imported into Bengal, Rx 42,292,342 into Bombay, Rx 3,503,989 into Sindh, Rx 6,457,425 into Madras, and Rx 5,457,752 into Burmah. The exports from Bengal amounted to Rx 39,806,476; from Bombay, Rx 40,976,131; from Sindh, Rx 5,072,433; from Madras, Rx 11,594,508; from Burmah, Rx 7,781,542. The imports of specie and bullion, both private and Government, consisted of Rx 12,388,474 of silver and Rx 5,066,030 of gold, and the exports consisted of Rx 1,450,598 of silver and Rx 455,724 of gold. The distribution of the foreign trade is shown in the following table, giving the values of the imports of merchandise from the principal countries and British colonies in 1890, and of the exports of Indian products to each of them, in tens of rupees:

COUNTRIES.	Imports.	Exports.
Great Britain.....	50,291,140	87,960,864
China.....	2,449,501	18,801,477
France.....	975,647	7,714,807
Italy.....	510,508	4,217,755
Straits Settlements....	2,441,400	4,586,746
United States.....	1,729,156	3,736,324
Egypt.....	75,898	3,860,974
Belgium.....	873,827	5,641,045
Austria.....	708,716	2,960,484
Ceylon.....	692,119	2,102,241
Australia.....	391,732	1,063,430
Japan.....	28,127	1,218,998
Germany.....	568,911	2,764,657
Mauritius.....	1,735,001	1,015,880
Arabia.....	878,570	825,148
Netherlands.....	9,469	358,705
East Africa.....	419,623	563,233
Persia.....	803,916	497,193
Spain.....	9,242	407,075

The values of the different classes of imports of merchandise on private account and of exports of Indian produce, in tens of rupees, for the year ending March 31, 1890, are given in the following table:

MERCHANDISE.	Imports.	Exports.
Live animals.....	230,768	98,085
Articles of food and drink.....	7,865,534	25,355,544
Hardware and cutlery.....	1,096,191	11,055
Metals.....	5,706,063	52,189
Machinery.....	2,495,885	92
Railroad materials.....	1,521,837	
Chemicals, drugs, etc.....	1,250,342	14,990,462
Oils.....	2,645,218	54,945
Raw materials.....	8,724,027	44,286,481
Yarns and textile fabrics.....	83,291,674	9,924,733
Apparel.....	1,296,394	113,312
All other articles.....	5,157,946	8,721,010
Total.....	66,560,120	99,096,862

The imports of cotton manufactures were Rx 29,874,050 in value, and the exports Rx 6,745,259; exports of raw cotton, Rx 18,669,934; exports of oil seeds and other seeds, Rx 10,620,693; exports of opium, Rx 10,115,936; exports of rice, Rx 10,110,482; exports of wheat, Rx 5,792,377; exports of raw jute, Rx 8,639,861; exports of jute manufactures, Rx 2,791,242; exports of tea, Rx 5,277,650; exports of hides and skins, Rx 4,524,260; exports of indigo, Rx 3,863,084; exports of coffee, Rx 1,489,872; exports of wool, Rx 1,086,069; imports of raw and manufactured silk, Rx 2,845,159; exports of raw silk and cocoons, Rx 639,545; exports of silk manufactures, Rx

260,721; imports of raw and refined sugar, Rx 2,200,049; exports of sugar, Rx 917,179; exports of timber, Rx 660,696; exports of lac, Rx 488,543; exports of spices, Rx 464,140; exports of saltpetre, Rx 411,276; imports of liquors, Rx 1,485,145; imports of coal, Rx 1,308,590; imports of woollen goods, Rx 1,455,235; imports of salt, Rx 894,532; imports of spices, Rx 852,350. The duty collected on salt was 23,789,888 rupees. The gross amount of the import duties was 31,249,315, and of the export duty on rice 7,182,821 rupees. The imports that came through the Suez Canal amounted to 553,773,859 rupees; and the exports that passed through the canal to 572,271,900 rupees. The overland trade with countries beyond the frontiers in 1890 was valued at Rx 3,505,300 for imports and Rx 4,930,550 for exports.

The imports of merchandise for the year ending March 31, 1891, were valued at Rx 71,975,775, and the exports of domestic produce at Rx 100,215,058. The decrease in exports was confined chiefly to raw materials. The cotton exports fell off over Rx 2,000,000, rape seed nearly as much, and jute over Rx 1,000,000; while exports of rice and wheat were much larger than in the previous year. The export of Indian yarn, mainly to China, increased from Rx 5,748,732 to Rx 6,516,088. The exports of cotton piece goods also show a steady increase from year to year. The imports of cotton yarns and piece goods were Rx 31,010,349 in value. Imports of merchandise and of treasure were stimulated, and exports were checked by the sudden rise of the rupee and speculation in silver and silver securities in London. Exchange rose from 1s. 5d. in the beginning of 1890 to 1s. 8½d., by the end of August, then fell more rapidly than it had risen, with fluctuations that continued till the end of the financial year, when the rate was 1s. 5½d. The net imports of silver during the year were Rx 14,175,136, and the net imports of gold Rx 5,636,000.

Navigation.—The number of vessels entered at Indian ports during the official year 1889-'90 was 5,282, of 3,658,181 tons. Of these, 1,869, of 2,960,551 tons, were British; 1,093, of 156,670 tons, were British Indian; 1,612, of 84,254 tons, were native; and 708, of 456,706 tons, were foreign. The total number cleared was 5,391; total tonnage, 3,657,405. The steamers entered and cleared by way of the Suez Canal numbered 1,608, of 3,055,364 tons, against 1,722, of 3,143,957 tons, in 1888-'89.

Communications.—There were 16,095 miles of railroad open to traffic on March 31, 1890, an increase in twelve months of 854 miles. The capital expended by the state on railroads was Rx 122,949,693. The companies had Rx 82,979,671 invested. The gross receipts for 1889 were Rx 20,493,662. The number of passengers was 110,644,749; the quantity of freight, 22,155,164 tons. The net earnings amounted to Rx 10,116,262, the working expenses having been Rx 10,377,400, or 50·64 per cent. of the gross earnings. The net profit was 4·93 per cent. on the capital of all the lines, against an average of 5·12 per cent. in the year preceding.

The number of letters, money orders, and postal cards delivered through the post-office in 1888-'89 was 260,628,110; of newspapers, 22,

096,378; of parcels, 1,797,705; of packets, 8,102,035. The receipts were Rx 1,281,540, and the expenses Rx 1,342,452.

The Government telegraph lines, exclusive of the Indo-European telegraph cable and land line running through Persia, had a total length at the close of the fiscal year 1889 of 33,402 miles, with 96,654 miles of wires. The number of private messages sent during the year was 2,983,152. The receipts amounted to Rx 742,148, and the expenses to Rx 704,092.

Hindu Marriages.—The agitation for the reform of the marriage laws of the Hindus resulted in the enactment by the Legislative Council in March, 1891, of a law amending the section of the penal code relating to rape by raising the minimum age of consent from ten to twelve years. The pressure which brought about this change came partly from England. A committee of prominent and influential Englishmen memorialized the Indian Government to induce it not only to raise the age of consent, but to declare infant marriages invalid unless they are afterward consummated, to repeal the law for the restitution of conjugal rights, and to forbid the religious excommunication and social proscription of widows who remarried. In India the agitation for the protection of child-wives was led by a Parsee journalist, Mr. Malabari, who was supported by the unorthodox Hindus, the section who are imbued with European ideas and free thought. The Mohammedan community, though pervaded to some extent with the Hindu custom of early marriages, stood aloof from the controversy. The orthodox Hindus of Bengal were a unit in combating the measure, which contravened the teachings of their sacred books. The Bombay and Maratha Brahmans, who follow other commentators, found nothing in this proposition contrary to the religious law, and were divided regarding its desirability. Hindus everywhere resented the interference of outsiders with their family life and religious customs. The Bengalee expounders, represented in the Governor-General's Council by Sir Romish Chunder Mitter, denounced the measure as a breach of the Queen's proclamation promising to abstain from disturbing the religious and social customs of the people. Many feared that it was an entering wedge that would result in the interference of the Government with important precepts of their religion, as, for instance, by declaring marriage contracts for infants void unless ratified. The Hindu marriage is divided into three stages—the betrothal, the wedding, and the *gauna* or leading home of the bride into the house of the bridegroom or of his parents. The book of Manu prescribed twenty-four as the right age for a young man to marry. In modern times it is customary to betroth boys of ten or twelve to girls of five or six. It is a sin for a Hindu of the higher castes to neglect to provide husbands for his daughters at an early age, and the practice is copied by those of inferior castes. Religious duty requires the consummation of the marriage as soon as the girl reaches the child-bearing age, for it is the desire of every Hindu to have male offspring, without which he will find no place in heaven. Through a son one attains the future life, through a grandson immortality, and through a great-grandson the celestial world. The promoters of the age-of-con-

sent bill made no pretense that it was required for the strict Hindus, who are known to be ruled by high religious and moral motives. Medical evidence was advanced in favor of raising the age of consent to fourteen, or even sixteen, because physical growth and development is not more precocious in India than in colder countries; but this was impossible. Child marriages occur mostly in the wealthier and better educated social class, and the abuses incident to the custom among the irreligious. It was said that the evils had their origin to some extent and derived their sanction from principles of English law incongruously grafted on the Indian system. By fixing the age of consent as low as ten years the authors of the penal code showed their regard for the marriage customs of the natives. Still, the father of a girl was not obliged to deliver her to the husband before the age of puberty, nor would he ever do so until the law for the restitution of conjugal rights was introduced, which left the judges no option but to order immature girls to be given into the custody of their affianced husbands at the suit of the latter.

Sir Madhava Rao and other opponents of the age-of-consent bill asserted that the evils that it was designed to remedy had no existence, and that it would merely serve as a means of oppressive treatment of husbands by the families of wives or as a weapon in the hands of revengeful or extortionate constables and magistrates, enabling them to dishonor high-caste Hindus by invading the *zenana* and profaning the sacred family life that is held religiously dear. To obviate this objection the bill, as far as it relates to married persons, made offenses under it non-cognizable, except by resident magistrates and police inspectors. The law is expected to have little practical effect, except to enable parents to retain the custody of brides until they come to the marriageable age as defined in the act. Unlike previous British legislation in religious matters, the present act had the support of a large part of the Hindu community. The law against suicide of widows, that exempting sons from obligation to pay their fathers' debts, and that legalizing remarriage of widows remained long a dead letter, and the two last are still of slight effect.

The Vernacular Press.—The congress movement in India has been held in check by official pressure, but the political unrest at the bottom of it has found a voice in the numerous native newspapers, which could not be effectually hushed without suppressing the liberty of the press already accorded. A large part of the Anglo-Indians have urged such action. The congress party has divided into two groups, one of which adhered to the political programme represented in Parliament by Charles Bradlaugh, the object of which was to secure elective representation for the native races in the Imperial and provincial councils; while the other deemed social reform of greater consequence, and wished to bring forward for discussion the treatment of children and widows and the wasteful extravagance of marriage and funeral ceremonies, much to the disgust of conservative and orthodox Hindus. These social subjects were practically excluded from the *agenda* of the Congress. When the age-of-consent question was submitted, it required all the influence of Mr. Hume, the originator of

the congresses, to obtain for it a hearing. The press organs of the native party, such as the "Amrita Bazar Patrika," the "Hindu Patriot," and "Bangabasi," offered an uncompromising opposition to the age-of-consent bill, which they represented as an intermeddling measure of the foreign conquerors, tending to undermine the Brahmanical faith and destroy the religious and social liberty of the people. The reformers threatened to desert the congress movement.

The freedom taken by native editors in criticising the Government has long been the bugbear of the older bureaucrats, who believe that the creation of a public opinion and national sentiment in India would be the death-blow of British rule. The present Government has been more inclined to their view than its predecessors. In July an order was issued forbidding the publication of newspapers or periodicals in places outside British India under the control of the Governor-General without the written consent of the political agent, which may be withdrawn at any time. Any person disobeying the order can be banished by order of the political agent. On Aug. 7 the Government arrested the proprietor and editor of the "Bangabasi," one of the most important native papers, representing the orthodox Hindu section of the Calcutta University and the educated class in Bengal generally. They were prosecuted for seditious libel under a section of the penal code which makes it an offense punishable with transportation for life or imprisonment for three years to attempt to excite disaffection toward the Government. The articles complained of, written at the height of the agitation against the age-of-consent bill, described the British rule as one of brute force and selfish self-interest, which pursued objects disadvantageous to India with the aid of taxes wrung from the people, and made no real provisions against flood and famine. Facts were cited to show that in states where the people were happy and prosperous under native rule British annexation had been followed by impoverishment of the people and disorganization of the public administration, and that the spread of cholera, fevers, and other preventable diseases had marked the extension of British dominion. The section of the code under which the prosecution was brought contains an explanatory clause stating that disapprobation of measures of the Government, compatible with a disposition to render obedience to the lawful authority of the Government and to support it against unlawful attempts to subvert or resist that authority, is not disaffection. The Indian law of trial by jury allows the judge, when there is a majority of six to three, to pronounce a verdict in accordance with the opinion of the majority. The jury stood seven to two, and the Chief Justice, Sir W. C. Petheram, without asking the opinion of the majority, discharged the jury. The defendants afterward apologized to the Lieutenant-Governor of Bengal, acknowledging that the articles, though not intended to excite disaffection, were intemperate and disrespectful. The native journalists in general took warning from the Chief Justice's charge to the jury, and formed a press association as a safeguard against ignorant infractions of the press laws. When Lord Ripon was Governor-General, in 1880, Sir

Roper Lethbridge, then Press Commissioner, reported regarding the difficulty under which native journalists labored in having no information regarding the acts and policy of the Government, except such as they gathered at second hand from the Anglo-Indian press. He recommended that the official *communiqués* given out to all the Anglo-Indian papers should also be circulated among the native editors. Owing to considerations of expense, or to the disinclination to bridge the gulf between the conquering and the subject race in any particular, this recommendation has never been acted upon.

Religious Riots.—In addition to the tumults that occur annually when the Hindus and Mohammedans mob each other in the great centers of population on the occasion of their religious festivals, the British authorities had to contend with a serious riot in 1891 that they provoked themselves by demolishing a Hindu temple in the sacred city of Benares in order to clear the site for water works. The people closed their shops, and the whole population gathered in the streets. A guard of soldiers was posted around all the principal buildings, and troops were stationed at the points of vantage throughout the district. Yet when the workmen began to raze the shrine, on April 16, the violence of the mob could not be restrained. The telegraph wires were cut and the railroad station sacked, and volunteers had to be summoned to check the disturbance and arrest the more violent rioters. The Hindus and Buddhists throughout India shared in the indignation against the destruction of this ancient temple. The persons arrested for causing the disturbance were sentenced to three years' rigorous imprisonment.

The Legislative Councils Bill.—The national congresses, after living down the opposition which naturally attended such a movement in India, had in 1889 already extracted from the persons at the head of the Administration a qualified assent to the expansion of the legislative councils and the introduction of the elective principle for the non-official members. The Congress of 1889, under the lead of Charles Bradlaugh, put back the reform by adopting the more radical scheme of popular representation through electoral colleges. The Government was willing to receive into the councils representatives of boards of commerce, municipal boards, great land owners, and the universities, but set its face against Mr. Bradlaugh's proposition for the indirect representation of all classes, with the right to discuss the budget, the right of interpellation, the right to call for papers, publication of the proceedings, and other attributes of Parliamentary government. A bill to appoint some representative members and to permit discussion of the budget and interpellation with restrictions was introduced by Lord Cross in Parliament in 1890, but was crowded out. In 1891 Lord Northbrook brought forward a somewhat more liberal measure, giving powers to the Viceroy to nominate from 10 to 16 additional members to the Council instead of from 6 to 12, as at present, and making the non-official members in Bombay and Madras from 8 to 20, instead of from 4 to 8. In making such nominations, the Governor-General, governors, or lieutenant-governors may accept the advice of cor-

porate or public bodies, and conditions under which nominations shall be made may be regulated by an order in Council, approved by the Secretary of State. The powers of the additional members of the Viceroy's Council are limited to discussing and voting on the specific measures brought forward for enactment.

Manipur.—The small native state of Manipur, occupying a round depression in the mountains of northeastern India between Assam and Upper Burmah, has an extent of 8,000 square miles, and in 1881 contained 221,070 people of a Mongoloid type with a considerable admixture of Aryan blood. Their habits are barbarous, but not warlike. In the raids which formerly were frequent between the Manipuris and the Burmese, the Indian Government interfered two or three times to save the country from being annexed by King Thebaw. The neighboring mountains are inhabited by the fierce Naga, Suti, Kuki, and Lushai tribes. The Maharajah Chandra Kirti Sing, who established his supremacy after a dynastic war in 1851, aided the British in the Naga war of 1877, and was made a Knight of the Star of India. Up to 1866 he had to contend against various pretenders, members of the reigning family, who instigated the hill tribes to raid the country. In the last century, when Manipur was about to be eaten up by the Emperor Akbar, the Maharajah threw himself upon British protection, which he received. Then came the first Burmese war, and Manipur again fell into danger. When the first treaty with Burmah was made, the safety of the little state was specifically treated for. When territorial changes on the eastern frontier were made, the Indian Government arranged for a small transfer of the Manipur territory to Burmah, and granted to the Maharajah an allowance of £50 a month in consideration of the same. About 1830 trouble arose about the succession, and the Queen mother and her infant son found refuge in British territory. The son was later established on the throne, and received British recognition. Sur Chandra Kirti Sing died in 1885, leaving eight sons, who divided into two or three factions. Sur Chandra Sing, the eldest, was installed as Maharajah in 1887, and Kula Chandra Dhuja Sing was recognized as Jubraj or heir-apparent. The order of succession in Manipur is that the eldest son of a ruler who dies leaving no brother shall succeed him, and that the throne shall descend to his brothers in the order of their age. Since they are usually numerous and born of different mothers, attempts to overturn the reigning Maharajah are frequent. A dispute having arisen between the Senaputty, the second in descent from the old Maharajah, Sur Chandra Sing, and a younger brother, the Pucca Sena, and the Maharajah having sided with the latter, the Senaputty, commander of the military forces, numbering about 7,000 men, in September, 1890, seized the palace and the person of the Maharajah. The English political resident, Frank St. C. Grimwood, acquiesced in the abdication of the Maharajah, and arranged for his safe conveyance to the neighboring British province of Cachar. Mr. Grimwood stood under the orders of the Chief Commissioner for Assam, James W. Quinton, who approved of his course

in not attempting to undo the palace revolution, and directed him to recognize as Regent the Jubraj or next heir to the throne, who had proclaimed himself Maharajah as soon as he was informed by the Senaputty of the forced abdication and deportation of Chandra Sing. He had taken no part in the affair, having gone away into the country to avoid being mixed up in the conflict between his brothers. As soon as the old Maharajah had reached British territory, where he knew that his life was safe, he telegraphed to Mr. Quinton, denying that he had formally abdicated, and asking for the intervention of the Indian Government to restore him to the throne. When the trouble first began Mr. Quinton sent word to Mr. Grimwood that he could have troops to maintain the authority of the Maharajah, which the Indian Government was bound to defend under the treaty of protection. Mr. Grimwood did his best to persuade the Maharajah to recall his decision to resign the *gaddi* or sovereignty and flee from the country. After he had abdicated and fled in a panic, the local British authorities, following the settled policy of the Indian Administration, were obliged to provisionally recognize the *de facto* native government until the Supreme Government at Calcutta should decide who was to be ruler. Mr. Quinton and Mr. Grimwood, in their reports to the Viceroy, said that the Senaputty had made himself exceedingly popular by his courage, generosity, ability, and force of character, and that things were going on tranquilly under the new Maharajah. Chandra Sing, who was accompanied in his flight by the Pucca Sena, went to Calcutta and prayed to be reinstated, convincing the Viceroy by his arguments until the officers on the spot urged the objections to his restoration. The Governor-General and his Council took a long time to deliberate, and meanwhile Mr. Grimwood established cordial relations with the Jubraj and the Senaputty. In January the Viceroy signified a desire to restore the old Maharajah. Mr. Quinton, who went to Calcutta, strongly advised against such a step, as it would involve the maintenance of a large garrison in Manipur and the frequent interference of the paramount government. The deposed ruler was a weak and vacillating man, who had shown himself too timid to punish the Senaputty with banishment, as advised by the Chief Commissioner on the occasion of a defiant outbreak in 1888, and had lived in dread of his brother ever since. On further consideration the Governor-General in Council decided to confirm the Jubraj as Maharajah, since he had taken no part in the revolution, but to punish its leader, the Senaputty, by internment in some distant part of India. Mr. Quinton received orders on Feb. 21 to proceed to Manipur with a sufficient military force and to arrest the Senaputty as secretly and quietly as possible. The Chief Commissioner took a force of 400 Goorkhas from two of the best regiments in the Indian army. The escort was under the command of Col. Charles McDowal Skene, who was experienced in frontier warfare, and it was supposed to be strong enough to deal with the whole Manipuri army. Another body of 200 Goorkhas, under Capt. Cowley, was ordered to Manipur. The Chief Commissioner was prepared

to fight, and he did not take a large force because he anticipated little resistance from the untrained Manipuri militia, whose only good weapons were 200 Enfield rifles and two 7-pounder guns presented to the Maharajah in 1887 for assisting the British troops in Burmah. It has ever been the military policy of the Government of India in dealing with the native princes by bold and adventurous action to impress them with the superior prowess of the British troops. Kept in complete ignorance of the wish of the Viceroy to restore the ex-Maharajah and of his final decision to remove the Senaputty, Mr. Grimwood cultivated cordial relations both with the new Maharajah and with the Senaputty, who was practically the ruler. When Mr. Quinton entered Manipur from the north by way of the Kohima pass, he sent forward Lieut. Gurdon, who arrived in the city of Manipur on March 15, 1891, but told him nothing of the Chief Commissioner's plans. Mr. Quinton, on the 20th, informed Mr. Grimwood that it was his intention to call a *darbar*, and that it would be his duty as resident political agent to arrest the Senaputty and deport him from the country. His wife begged that the task should be given to some person who had not received the prince's hospitality and kindness. Mr. Grimwood had gone to Sengmai to meet the Chief Commissioner, and the Senaputty came out to receive him with honor, and conduct the party into the capital with a military escort. Mr. Quinton's purpose to arrest the Senaputty in open *darbar* was communicated by telegraph to the Viceroy and approved on March 19. A council was held on the 21st, at which Mr. Grimwood advised against making the arrest, saying that formidable opposition would be offered. He was overruled by the civil and military chiefs of the expedition. The British force had no mountain guns or other artillery, and the soldiers carried only forty rounds of ammunition, as the march was through a rugged country and there was known to be a supply of cartridges at the Residency.

On his ceremonious entry into Manipur, on March 22, Mr. Quinton announced that a *darbar* would be held in the Residency at noon. The Senaputty, rising from a sick bed, went to the Residency, where he was kept outside for a long time. Surmising from the number of guards the intention to arrest him, he went away. The Regent appeared at the appointed hour, but the Chief Commissioner refused to receive him and his ministers because the Senaputty and the other princes were not present. The Regent said that the Senaputty was unwell. Mr. Quinton demanded that he should be sent for, and detained him as a prisoner until he sent an order for his brother to come. When the Senaputty returned answer that he was too ill to come, the *darbar* was dismissed. After a conference between the political agent and the ministers, another *darbar* was appointed for the following morning. But to this no one came. The Chief Commissioner then sent a message to the Regent, saying that if the Senaputty was not produced he would have him arrested. The Regent was frightened at the menaces of the Chief Commissioner, who threatened to depose him, but was still more in dread of the Senaputty, who

had suspected the treacherous plot to arrest him in *dachar*, and was determined to fight for his liberty. During the day he gathered into the palace inclosure some of his best fighting men, Manipuris, Nagas, and Kukis, and distributed arms and ammunition. Although no cartridges were found in the Residency that would fit the rifles of the Goorkha soldiers, the Chief Commissioner had gone too far to recede. At a council of war it was decided to arrest the Senaputty in his house within the walled palace inclosure at daybreak on the 24th. The Senaputty was prepared for the force of 250 men who attempted to surround his house before it was light in the morning. They were received with rifle and artillery fire, and when they succeeded in gaining possession of the house after a sharp struggle, the Senaputty was no longer there. Meanwhile the Manipuris attacked the Residency and finally shelled it with two guns. The detachment that held the Senaputty's house, Col. Skene's reserve force of 120 men that took position at the polo ground within the inclosure, and the party that was posted at the outer gate, all fell back on the Residency. This was made untenable by the artillery fire, and when evening came, the Chief Commissioner and Col. Skene decided to seek a truce. On the bugle signal to cease fire the Regent ordered his troops to stop also, and sent a letter reciting the services that had been rendered by his state to the British Government, and promising that his troops would cease hostilities if the British would throw down their arms. On these conditions being refused, the Senaputty sent word that he would like to discuss terms with the Chief Commissioner at a point midway between the palace and the Residency. Mr. Quinton, Col. Skene, Mr. Grimwood, William H. Cosins, Mr. Quinton's secretary, and Lieut. Simpson, a guest of Mr. Grimwood who was acquainted with the Manipuri rulers, went to the outer gate without a military escort, the officers even leaving their side arms. After a parley they went inside the gate, and were seen no more. They were put in irons and publicly beheaded. Investigation showed that Mr. Grimwood was speared by a soldier, but that the others were killed by the public execution by order of the second in command, the Tongal general. The people in the Residency were uncertain regarding the fate of their chiefs until firing was reopened after midnight. Soon it was found that the cartridges were nearly exhausted. Withdrawing from the Residency, they retreated by the road toward Cachar, expecting to meet Capt. Cowley's force. They had with them seventeen wounded, Mrs. Grimwood, and many unarmed followers. Harassed by Manipuris and Nagas, they took to the hills, and on the 26th, having been two days without food, they effected a junction with Capt. Cowley, who had also been attacked and was short of ammunition and of rations. Capt. Cowley and Lieut. P. R. Gurdon, who commanded in the retreat from Manipur, therefore decided to retire from the enemy's country. By forced marches they gained the Cachar frontier after one more fight with the garrison at Khowpum. Only one fourth of the Chief Commissioner's escort were brought back from Manipur in safety.

A punitive expedition was at once ordered. Three columns were directed to converge on the Manipur capital from the three passes leading into the valley from Kohima, Silchar, and Tamu. A detachment of Mr. Quilton's force that had been left at Langtobal, four miles south of Manipur, when the others fled to Assam, retreated in good order to Tamu, fighting all the way, and reaching that place on March 27. Lieut. Charles William James Grant, who was stationed there, telegraphed for permission to go to the rescue of Mrs. Grimwood and the rest. Setting out the next morning with 50 Sikhs and 30 of the escaped Goorkhas, he drove 150 Manipuris out of an intrenchment and 200 out of Palel on the 30th, and the same night attacked the fort at Langtobal, which was defended by 900 of the Senaputty's troops. The firing was so true and the advance so rapid that the intrenchments were carried with the loss of only a single man. Lieut. Grant, who was made a major for his gallantry in the capture and defense of the fort, while the Goorkha *jemadar* Birdal Nagarkote was rewarded with the title of *bahadur*, remained in the fort to await re-enforcements. The Manipuris attempted to attack the position, first with infantry, and then with their guns, but were so frightened by the accurate shooting of the Indian troops that they dared not venture within rifle range. Earthwork parapets were made to strengthen the fort against shells. Word was brought from some captives that the Senaputty had 108 prisoners, and would kill them unless the British retired from in front of the city, and the Senaputty sent food for their retreat, threatening to destroy them if they did not return to Tamu. On April 6 the Manipuris made a bold effort to storm the fort, and a large number were killed. On the 8th, in obedience to orders sent from Burmah, Lieut. Grant withdrew. Joining Capt. Presgrave, who came up with re-enforcements, on the following day, the whole force of 180 men put to flight about 400 Manipuris at Palel. On the 10th Major Sir Charles Leslie came up with 400 Goorkhas, and they waited till Brig.-Gen. Graham brought up the main body of the Burman column, which had from Tamu, south-east of Manipur, a shorter march and better roads than the Silchar column, advancing from the west, under the command of Lieut.-Col. R. H. F. Rennick, or than Maj.-Gen. H. Collett, who advanced southward from Nigring, on the Brahmaputra, with a considerable army as fast as the bad state of the roads would allow. No resistance was encountered by the Assam and Silchar columns, but the intense heat, the heavy rains, and the outbreak of cholera caused more suffering and mortality than battle could have done. During the expedition 86 men died from cholera. Maj. Grant and Capt. Drury, advancing from Palel, where Gen. Graham's troops were encamped, found 1,000 Manipuris intrenched in the hills near Tobal. They sent back for artillery and more men. The position was surrounded, and 190 of the enemy, who fought desperately, were killed. Maj. Grant was shot in the neck. This was the last engagement. The other columns had arrived simultaneously before the city, and the entire population fled to the mountains. The British troops marched

into the deserted town on April 27. Gen. Collett was appointed Acting Chief Commissioner of Assam, and thus clothed with the chief civil authority in addition to the command of all the military forces, numbering about 4,000 men. The hills were searched for the Senaputty, the Maharajah, and the other members of the Manipur Government, who fled with their army northeastward, but could find no secure asylum either in Manipur or in Burmah. All were captured within a few weeks.

One of the chief results of the Manipur catastrophe has been a solemn declaration of the British Government that the perfidious practice of enticing an enemy into a *darbar* in order to make him a prisoner, although there have been many precedents, will never again be permitted in India. It was deemed necessary for the sake of British prestige to make an example of the Senaputty and the Maharajah and all who were concerned in the execution of the British officers. Not being British subjects, they could not be tried under Indian law. The Indian Government holds that an attack on the Queen's forces in a protected native state, though not technically to be called treason or rebellion, is not war, and is something that demands exemplary punishment. A military court of inquiry was instituted to try the Manipuri princes. The old Senaputty, Tekendrajit Sing, the chief actor in the events, who became titular Jubraj on the accession of his brother as Maharajah, but still retained command of the forces, was tried on the double charge of making war on the Queen and of abetting murder. The Maharajah or Regent and his brother Angao Sena, who succeeded to the title of Senaputty, were tried on the first charge only. Manipuri officers who were proved to have taken part in carrying out the order for the execution of the British officers were first tried, convicted, and executed. The Senaputty brought witnesses to prove that he had begun fighting only in self-defense when attacked by the British force, and that so far from having ordered Mr. Quinton and his companions to be killed, he had endeavored to save them from his enraged soldiery. They had refused the terms of absolute surrender that he demanded, and when descending the palace steps to return to the Residency were mobbed by the Naga and Kuki soldiers. The Senaputty came on the scene after Mr. Grimwood had been stricken down. He had the officers conducted to a room in the palace, and said that he was asleep when the Tongal general ordered them to be fettered and led out one by one to be decapitated. All three princes were pronounced guilty, as well as the Tongal general, and were condemned to death. The Senaputty and the Tongal general were hanged at Manipur, where the trial took place, on Aug. 13. The Viceroy commuted the sentence of the Regent and the other brother to lifelong transportation and confiscation of all their goods.

The British Government decided not to annex Manipur, which would involve the introduction of British law and much expense and conflict with the natives. The same object was practically accomplished by choosing as ruler, with the diminished rank of rajah, a child of five years, Chura Chand, in whose name the govern-

ment will be directed by a British political officer. The succession was made hereditary in the direct line, each successive rajah being bound to acknowledge the paramount authority of the Indian Government. The payment of tribute and other incidents of political dependency will impress on the natives the fact of the extinction of the national liberties that they have enjoyed for more than one thousand years, and prepare them for eventual absorption in the Indian system.

The Miranzai Expedition.—The work of reducing the warlike Pathan tribes beyond the border of the Punjab, and thus extending and consolidating British dominion on the most vulnerable frontier, was carried forward by two considerable military expeditions in 1891. The Miranzai field force operated from the Miranzai valley, inhabited by a section of the Bangash Pathans, who are obedient British subjects, against the Orakzais living in the hills beyond. These hillmen afforded a pretext for a so-called punitive expedition by their border feuds with the neighboring tribes. For every raid on a British village a heavy fine was charged up against them. In January, 1891, Gen. Sir William Lockhart set out with an army to wipe out old scores and to push the British boundary a little farther into Afghanistan by building roads and establishing military posts in these hills. Though the tribesmen offered little resistance, the campaign was trying to the troops, owing to the severe cold. Between Jan. 20 and Feb. 20 every considerable village in the Khanki valley was visited, twenty towers were blown up, fines were collected, arms seized and hostages taken, and Makhmaddin Malik, leader of some of the last raids, was carried off a prisoner. A small garrison was left to protect working parties employed in building roads and a line of fortified stations on the Samana range, which overlooks the Khanlik valley. The Orakzais, who have boasted undisputed possession of these hills for ages, were stirred up by fanatical priests to attack the fortified posts on April 4. The guards and laborers were driven back into British territory, and nine Sikh soldiers were killed. Gen. Lockhart, who had joined the Black Mountain expedition, in which he commanded the reserve force, immediately organized an army of 7,000 men with 18 guns at Kohat, and by April 17 he was on the spot and had made his dispositions to deliver a general attack on the Orakzais, who were assembled in force to defend the Samana hills, the inhabitants of the valley having been joined by other clans and by some of the Afridis. The tribes were still gathering when the advance from Gulistan began. Sistopi was first captured, enabling the British forces to occupy the Mastaon plateau, which is the key to the whole range, and on the following day the main attack was made on Saragarhi, and the village of Ghuztang was attacked simultaneously, forcing a retreat into the Khanki valley along the whole line. Three days of severe fighting, with a loss to the Pathans of 300 left dead on the field, in addition to the great number carried off, according to their custom, arrested the movement and caused the warriors arriving from distant tribes to disperse to their homes. Those who were already involved in the disturbances still floated their

standards within sight of the British camps, and much more fighting was necessary to terminate the expedition satisfactorily; for after scouring the Khanki valley, Sir William Lockhart invaded the Akhel country, where a sharp engagement took place on April 22, and the districts of the Shekhan and Marnozai Darabur tribes, destroying towers and exacting reparation. Movable columns ranged through the country for more than a month, inflicting punishment on all who failed to make submission or were suspected of having taken part in the uprising. The military surveys were continued as far as the Kurmana valley. After all the tribes had apparently been cowed, the expedition was recalled, on May 23, three regiments and a mountain battery being left to guard the newly annexed territory at Samana. In the expedition the British lost 78 killed and 73 wounded, including 5 British and 3 native officers.

The Black Mountain Expedition.—The tribes of the Black mountains have successfully defied the British power on several occasions, and punitive expeditions sent against them have failed. In order to consolidate British power at Gilgit, Chitral, and other strategic points in the extreme northwest, the Indian Government has decided to reduce the tribes to submission and open the roads which the Allaiwals, Akazais, and Hazanzais have forcibly opposed. Gen. McQueen, who failed in the expedition of 1888, and was unable to advance into the Hazanzai country in the autumn of 1890, was replaced by Maj.-Gen. Elles, who started out from Derband on March 12, 1891, with an army of 6,800 fighting men and 1,900 followers. The Hazara field force was divided into two columns, one of which ascended the valley of the Indus, while the other crossed the hills. The troops were fired on as soon as they passed the Hazara frontier. On March 19 there was a sharp skirmish, on March 23 the village of Dilari was captured, and on March 27 Gen. Hammond took the Akazai village of Surmal, after which Col. Williamson joined him with the river column, and the united force advanced into the Akazai country. The Hazanzai district was afterward invaded. No attempt was made to punish the tribesmen. The troops intrenched themselves, built roads, and announced that they would occupy the positions until Hashim Ali, who had led the attacks on the former expeditions was delivered up.

The Pamir Region.—The Anglo-Russian Afghan Delimitation Commission of 1884-'86 failed to complete the work in the region of the upper Oxus, and left unsettled the northeastern frontier of Afghanistan and the relations of the Ameer with various khanates in and around the Pamir. The Anglo-Russian arrangement of 1872-'73 declared the Oxus up to its source to be the southern limit of the Russian sphere. Assuming that the southern tributary of the Oxus is the true upper course of the river, the Russians in Turkestan have explored and laid claim to Shignan and a great part of the Pamir plateaus, and forbidden Capt. Younghusband, Lieut. Davison, and other British officers to enter that region (see *AFGHANISTAN*). The Indian Government has displayed still greater military activity, having annexed Cashmere, occupied and garrisoned Gilgit and Chitral, and attempted to

conquer the Nagar and Hunza clans and other tribes of the Pamir, on the pretext that they were once tributary to Cashmere, although Indian scholars assert that they have maintained unbroken independence for more than twelve centuries. According to the British view of the region inclosed between the southern arm of the Oxus and the Aksu, or northern headwater, the territory now claimed by Russia, the western part has been under the effective sovereignty. To the larger eastern part the Chinese Government, probably prompted by England, has advanced a claim, and when Col. Yanoff, leader of the Russian exploring party, advanced into the Alichur Pamir, a Chinese official protested ineffectually. Subsequently explanations were asked by the Chinese ambassador in St. Petersburg. On the southeast the Russians claim that their line reaches to the northern passes of the Hindu-Kush, bringing them into actual contact with the Hunzas and other hill tribes that the British have vainly attempted to subjugate. In November Col. Durand attacked the Hunzas in Nilt, their stronghold on the side of Gilgit, and stormed the place. He and two other officers were wounded. A railroad is to be built through Cashmere. The state will not be annexed, but will be governed under strict British supervision.

Movements in Beluchistan.—During the winter of 1890-'91 Sir Robert Sandeman visited various chiefs in Beluchistan, with a view of composing tribal differences and reopening the old Kaffla route between India and southern Persia, which will likely be chosen for the future railroad to India in preference to the more vulnerable route through Khorassan to Herat and Candahar. The state of Panjgur, on the frontier of Persia, has been occupied by Beluchi levies, who have restored the old degree of peace and prosperity. The route from Karachi to Panjgur, which leads to Seistan, in Persia, is less difficult than that through the Zhob valley, where a railroad is being built that will unite the Sindh-Pishin line with the railroads of the Punjab. After the occupation of the Zhob valley by the British forces in 1889-'90, a section of the Sheranis, the Kidarzai clan, continued their depredations. Maj.-Gen. Sir G. S. White, since appointed commander-in-chief, who had full charge of the military arrangements, as Sir R. Sandeman had of political affairs, on the border fronting the Russian approach, went with a force sufficient to thoroughly impress the inhabitants with the necessity of thorough submission and with the object of winning their loyalty and co-operation, because the Zhob valley is the route of direct communication between the Punjab and Ghazni and Cabul, and affords an alternative means of approach to Candahar. The country is to be entirely amalgamated and governed by a British resident.

Burmah.—In the beginning of 1891 Sir Charles Crossthwaite was succeeded as Chief Commissioner of Burmah by Sir Alexander Mackenzie. The British forces were engaged at that time in Momeik and in operations against the Chins and the Kachins, and soon fresh trouble broke out in the Shan state of Wuntho. The policy of the Government after the annexation was to leave the Kachyens of the Bhamo district to themselves, that they might serve as a neutral

zone between Burmah and China. This course resulted in raids and disturbances requiring punitive expeditions, and, as the less costly method, the military authorities occupied the country of the Kachins south of the Tapin river, and reduced them to submission. North of the Tapin the tribes remained practically independent. The Chinese value the trade connection with Burmah, and on their side of the border they protect it with outposts and escorts. The plundering of caravans on the British side led to complaints, which were unheeded, and it was not until they prepared to place a garrison on the British bank of the Nampoung that the Chief Commissioner decided to post detachments on the river so as to take away every pretext for Chinese encroachment, because the boundary line is not settled by treaty and must yet be fixed by an Anglo-Chinese boundary commission. The jade mines were occupied also, lest China should advance a claim to that district. Disturbances in the district of the ruby mines necessitated a large re-enforcement of the military police in the district of Momeik, and the force was strengthened also in Katha and Bhamo and in the Chindwin district, which Sir Alexander Mackenzie determined to reduce to the settled and orderly condition of most parts of Upper Burmah. It was possible to draw away police from many districts, because Upper Burmah had become less free from dakoity and robbery than Lower Burmah. The difficulties that have continually arisen in the relations with the rich and powerful semi-independent state of Wuntho Sir Charles Crossthwaite thought he had removed, by treating the Tsawbwa that the British had set up after removing the old one with great honor and consideration. Sir Alexander Mackenzie saw reason to reverse this policy. He demanded the payment of fines for outrages committed in Katha and the surrender of dakoits, and sent expeditions to punish disturbers within the limits of Wuntho. The Tsawbwa at first co-operated in these measures. Afterward he took offense, conspired with the old Tsawbwa, his father, who still lived in the district, entered into correspondence with rulers of other Shan states, and collected arms for a rebellion against British authority. The old Tsawbwa begun hostilities by attacking and putting to flight a British force that had entered Wuntho to put down disturbances. The whole country instantly rose in rebellion. Railroad buildings were destroyed, telegraphs torn up, and all Indian officials driven out. A force of troops was at once thrown into Wuntho, but not sufficient to check the rebellion. The old Tsawbwa went so far as to attack outposts in British territory, and several times assailed Kawlin, which was held by 600 British troops. On Feb. 20 Sir A. Mackenzie issued a proclamation deposing the Tsawbwa and announcing the annexation of Wuntho. Brig-Gen. Wolsley took command of the operations, and 2,500 European and Indian soldiers advanced into Wuntho in two columns. The town of Wuntho was occupied on Feb. 26, and the Tsawbwa's palace was burned, to convince the people that his rule was terminated. The British carried on the war with great severity, but offered free pardon to all who submitted without resistance. The Tsawbwa attempted to make a

stand in a stockade near his capital. His forces were routed, and he fled with his father and the noted dakoit chief Bo Le into the mountains. The country was scoured by flying parties searching for the fugitives and collecting rifles and ammunition, of which a vast quantity had been smuggled in, and there was constant fighting for weeks until the people were so thoroughly cowed that they flocked in to deliver up their arms. The elder Tsawbwa fled into China. The younger one with his family went into hiding between Mansi and the Chindwin river. He applied for pardon, promising to pay a heavy fine if he were reinstated or his son made Tsawbwa in his stead, and pleading that the rebellion was the act of his father. The military occupation was continued until the people settled down to their ordinary occupations, and the country was organized as a British province. A military force took possession of the district of the jade mines also. As soon as its subjugation could be effected, the Chief Commissioner decided to bring Momeik, which had been administered by a tsawbwa as an autonomous Shan state, although the people are mostly Kachyens and Burmans, under direct British rule, as the disturbances which had been harshly suppressed by the British troops were caused by the misrule of the chief whom Sir C. Crossthwaite had placed over them. The district was occupied by 300 soldiers. The company that had leased the ruby mines asked to be released from payment of rent on account of the disturbed state of the district. The operations against the Chins in the hilly country on the Bengal frontier were prosecuted by a force of 2,000 men, who carried out nine expeditions before the rainy season without making much impression. The Thetta Chins, who had murdered Mr. Wetherell and had cut the telegraph and killed Sepoy pickets, repulsed a punitive expedition sent against them in January, killing Lieut. James and a number of Goorkha soldiers. This was the second defeat they had inflicted on the British, and they only yielded when two strong columns, with artillery, were sent against them. Five columns, aggregating 800 rifles, made a start toward the conquest of the Kachyens of the Bhamo district.

The failure of the monsoon caused a serious scarcity throughout Upper Burmah. Rice had to be imported, and was sold at double the usual price. Relief works, such as Sir A. Mackenzie could provide with the means at his disposal, did little to lessen the distress. The retarded rainfall, though deficient, averted a general famine. The parsimonious policy pursued toward Burmah by the Indian Government is the chief obstacle to the pacification of the country. When the railroads through Katha and Wuntho are completed the difficulties with the Chins, Kachyens, and Shans will cease, and if the ancient irrigation works were restored, dakoity and other disorders would disappear. The railroad to Mogaung will not be finished before April, 1895. The Indian Government wishes to replace the present army of occupation with Madras Sepoys, but the Chief Commissioner objects to this material because the Chins and Chinese Shans, and even the Burmese dakoits, show contempt for the Madrassis, who have proved themselves worthless in the field. The Shans, Karens, and Kachyens

can not yet be utilized as soldiers. The local regiments or military police are recruited from the same source as the Indian army, the warlike Sikhs, Gorkhas, Punjabis, and Pathans of northern India. Many are time-expired soldiers. This force is being strengthened, to relieve the Indian Government from the necessity of sending a large proportion of its best fighting forces to Burmah, and to prepare for the emergency of the withdrawal of the entire present army of occupation in the event of complications with Russia. The military police in 1891 numbered 430 officers and 15,500 men.

INDIANA, a Western State, admitted to the Union Dec. 11, 1816; area, 36,350 square miles. The population, according to each decennial census, was 147,178 in 1820; 343,031 in 1830; 687,866 in 1840; 988,416 in 1850; 1,350,428 in 1860; 1,680,637 in 1870; 1,978,301 in 1880; 2,192,404 in 1890. Capital, Indianapolis.

Government.—The following were the State officers during the year: Governor, Alvin P. Hovey, Republican, who died on Nov. 23, and was succeeded by Lieutenant-Governor Ira J. Chase, Republican; Secretary of State, Claude Matthews, Democrat; Auditor, J. O. Henderson, Democrat; Treasurer, Albert Gall, Democrat; Attorney-General, Alonzo G. Smith, Democrat; Superintendent of Public Instruction, Harvey D. Vories, Democrat; Judges of the Supreme Court, Silas D. Coffey, Walter Olds, Byron K. Elliott, Robert W. McBride, and John D. Miller.

Finances.—For the fiscal year ending Oct. 31, 1890, the report of the State Auditor presents the following figures: Balances in all funds of the State treasury on Oct. 31, 1889, \$974,109.35; total receipts for the year ensuing, \$3,737,195.18; total expenditures, \$4,471,948.13; balance in all funds on Oct. 31, 1890, \$239,336.40. For the general fund alone the figures are as follow: Balance on Oct. 31, 1889, \$811,734.56; total receipts for the year ensuing, \$1,631,978.83; total disbursements, \$2,315,980.99; balance on Oct. 31, 1890, \$127,732.40. Of the total general fund receipts the sum of \$183,827.38 was derived from advanced payments made to the State by the several counties and not properly belonging to the year's revenue, leaving \$1,448,151.45 as the net receipts for the year. These receipts were derived from the following sources: From the State tax levy, \$1,087,700.44; from insurance taxes, \$83,702.49; insurance fees, \$14,830.50; earnings of State Prison North, \$100,000; earnings of State Prison South, \$69,076.68; sale of State lands, \$21,224.84; earnings of Reform School, \$26,505.75; other sources, \$45,110.75. The expenditures of the fund may be classified as follow: Judiciary expenses, \$217,282.71; executive and administrative departments, \$77,638.74; State educational institutions, \$80,185.44; State benevolent institutions, \$721,333.45; State reformatory institutions, \$106,000; State prisons, \$169,076.68; interest on public debt, \$274,074.68; special appropriations, \$423,798.97; miscellaneous, \$246,590.32.

The receipts of the general fund for the year, as appears from the figures above given, fell short of the expenditures by over \$850,000. In 1890, as in every year since 1877, the State failed to raise a revenue sufficient to pay its current

expenses. As a result, the constantly increasing State debt had, on January, 1891, reached the enormous sum of \$8,540,615.12, with no surplus in the treasury as an offset. Successive legislatures had refused to raise the tax rate or to provide any relief till the General Assembly of 1891 grappled with the problem and passed a series of acts which are likely to work out a complete solution.

One of these acts provides for the levy of a tax of 6 cents on each \$100 of property for each of the years 1891 and 1892, the proceeds of which shall form a "Benevolent Institution Fund," so called, and shall be appropriated to the use of the benevolent and reformatory institutions of the State. The State tax rate is thereby increased from 12 cents (the rate heretofore levied for the general fund) to 18 cents on each \$100. Another act thoroughly revises and reconstructs the law regulating the assessment and collection of taxes. It creates a State Board of Tax Commissioners, consisting of the Governor, Secretary of State, Auditor, and two other persons appointed by the Governor, whose duty is to enforce the tax laws, to supervise their operation, to suggest improvements to the General Assembly, and generally to make efficient the tax system of the State. The board shall also assess all railroad property in the State, and shall equalize the assessment of real estate made by the local assessment boards. In performing these duties it is required to appraise and assess all property at its true cash value. As a result of this provision, the total valuation of the State for 1891 was increased by the board nearly \$400,000,000 over the valuation of 1890. The same act provides for the collection of the following taxes in addition to the general *ad valorem* tax on property: From foreign insurance companies, a sum equal to 3 per cent. of their gross receipts of premiums from business in the State, less losses actually paid in the State; from express companies, a sum equal to 1 per cent. of their gross receipts in the State, after making certain specified deductions; from telegraph companies, a sum equal to 1 per cent. of the gross receipts of their agents in the State; from telephone companies, a sum equal to one fourth of 1 per cent. of their gross receipts in the State; from sleeping-car companies, a sum equal to 2 per cent. of their gross receipts from business in the State.

A further source of revenue was provided by an act requiring the Secretary of State to charge fees for filing articles of incorporation and other certificates relating to corporate franchises, these fees to be in addition to the fees already allowed, and to be by him paid over to the State treasury. To provide funds for support of the State government until the revenues under these laws should become available, the Governor, Auditor, and Treasurer were authorized by another act to borrow \$700,000, issuing 34-per-cent. bonds therefor, payable in ten years, but redeemable at the option of the State in five years. If further sums should be needed to meet the appropriations of the session, the same officials were authorized to borrow not over \$700,000 additional, issuing the same kind of bonds therefor. They were also authorized to issue 34-per-cent. bonds to raise money for re-

tiring outstanding State bonds which may fall due, and whenever any temporary loan indebtedness of the State can be funded at a lower rate of interest they were authorized to issue bonds at such lower rate in amounts sufficient to retire such indebtedness.

Legislative Session.—The fifty-seventh regular session of the General Assembly began on Jan. 8 and ended on March 9. Early in the session United States Senator Daniel W. Voorhees, Democrat, was re-elected for the full term of six years over Gov. Alvin P. Hovey, the Republican nominee. The most important legislation of the session pertains to State finances, and is considered separately under that topic. The Democrats were again in control of both houses, and proceeded to pass a series of measures, abridging the appointive power of the Governor. As a result of similar measures passed at the session of 1889 and of rulings made by the State Supreme Court thereon, the Governor had already lost the right to appoint the State Geologist, the State Statistician, and the trustees of nearly all the penal and charitable institutions of the State, the two first-named offices being now filled by popular election, and the trustees being elected by the General Assembly. By the legislation at this session the office of State Inspector of Oils, filled by appointment of the Governor, was abolished, and the office of State Supervisor of Oil Inspection was created, to be filled by appointment of the Democratic State Geologist; the office of Mine Inspector, filled by appointment of the Governor, was abolished, and the office of Inspector of Mines, to be filled by appointment of the State Geologist, was created; the State Board of Agriculture, appointed by the Governor, was abolished, and the State Agricultural and Industrial board was established, its members being appointed by the Governor, the Secretary of State, and the State Auditor, or a majority of them (the present Secretary and Auditor being Democrats); the Board of Trustees of the Eastern Indiana Hospital for the Insane, appointed by the Governor, was abolished, and a new board was created, to be elected by the General Assembly; the office of Natural Gas Supervisor was created, to be filled by appointment of the State Geologist. All these acts were passed over a veto.

The State was redistricted in the interest of the Democrats, both for members of Congress and for members of the State Legislature, the bills therefor being passed over a veto. The new congressional districts are as follow:

- I. Counties of Posey, Gibson, Vanderburgh, Warrick, Pike, Spencer, and Perry.
- II. Counties of Knox, Greene, Daviess, Martin, Dubois, Lawrence, Orange, and Crawford.
- III. Counties of Harrison, Washington, Jackson, Jennings, Scott, Jefferson, Clark, and Floyd.
- IV. Counties of Shelby, Ripley, Decatur, Rush, Franklin, Dearborn, Ohio, and Switzerland.
- V. Counties of Owen, Putnam, Hendricks, Morgan, Monroe, Brown, Johnson, and Bartholomew.
- VI. Counties of Henry, Delaware, Randolph, Wayne, Fayette, and Union.
- VII. Counties of Marion, Madison, and Hancock.
- VIII. Counties of Sullivan, Vigo, Clay, Parke, Vermillion, Fountain, and Montgomery.
- IX. Counties of Boone, Tippecanoe, Clinton, Tip-ton, Hamilton, Howard, Benton, and Warren.

X. Counties of Carroll, Cass, White, Fulton, Pulaski, Newton, Jasper, Lake, and Porter.

XI. Counties of Grant, Miami, Wabash, Huntington, Wells, Adams, Jay, and Blackford.

XII. Counties of Allen, Whitley, Noble, De Kalb, La Grange, and Steuben.

XIII. Counties of Starke, Laporte, St. Joseph, Marshall, Elkhart, and Kosciusko.

To relieve the crowded docket of the State Supreme Court, an appellate court of five judges was created, which has exclusive jurisdiction of all appeals from the lower courts in cases of misdemeanor, cases originating before a justice of the peace where the amount in controversy exceeds \$50 exclusive of costs, all cases for the recovery of money where the amount does not exceed \$1,000, and all cases for the recovery of specific personal property, actions between landlord and tenant for the recovery of leased premises, and all appeals from orders allowing or disallowing claims against decedent's estates. In such cases the decision of the court shall be final. The act is to be in force for six years only.

The sum of \$75,000 was appropriated to secure an exhibit of the resources and development of the State at the World's Columbian Exposition, and its expenditure was intrusted to a board of 26 persons to be appointed by the Governor. To complete and furnish the Southern Indiana Hospital for the Insane, the sum of \$45,000 was appropriated, and for improvements at the Soldiers' and Sailors' Orphans' Home the sum of \$55,000. The practice of letting out by contract the labor of pupils at the State benevolent institutions is forbidden, and provision was made for their industrial education under direction of the authorities of these institutions.

In order to complete the State Soldiers' and Sailors' Monument in Circle Park, Indianapolis, a tax of 5 mills on each \$100 was authorized, in addition to other taxes, for each of the years 1891 and 1892, the proceeds of such levy up to the sum of \$100,000 to be expended upon this work. An immediate appropriation of \$30,000 was made from the State treasury for the same purpose.

Persons or companies engaged in mining or manufacturing were required to pay their employees at least once in two weeks, and were forbidden to sell, directly or indirectly, to any employé any merchandise or supplies at a higher price than they sell to other persons for cash. The Australian ballot law of 1889 was amended in many of its details.

The following amendments to the State Constitution were proposed and referred to the next General Assembly for concurrence: First, providing that corporations may be taxed upon their net or gross earnings; second, extending the limit of regular legislative sessions to one hundred days; third, increasing the term of office of the Secretary of State, Auditor, and Treasurer to four years, and making each official ineligible for immediate re-election; fourth, making the term of all county officers four years, and declaring them ineligible for immediate re-election.

Other acts of the session were as follow:

Making the first Monday of September, known as Labor Day, a legal holiday.

Amending the law regulating the descent of property.

Exempting honorably discharged Union soldiers and sailors from work on the public highways.

To provide for the incorporation of boards for the relief of disabled ministers of the Gospel, missionaries or their dependents, orphans, and other persons.

Requiring the use of sound wrought or cast iron casings and pipes, tested to at least 400 pounds pressure to the square inch, in the transportation or conducting of natural gas (which shall not be conducted at a pressure exceeding 300 pounds to the square inch), and making it unlawful to use any device for pumping or any other artificial process to increase the natural flow of natural gas from any well.

To prohibit the killing of any wild bird other than a game bird or bird of prey, or the sale of such bird, or the destruction of its nest or eggs.

To establish a State board of health.

To authorize the formation of corporations for the purpose of laying pipe lines and transporting petroleum.

To prevent any person from unlawfully wearing the badge of the Grand Army of the Republic, Union Veterans, Sons of Veterans, or Military Order of the Loyal Legion.

To provide for filing and recording trade-marks, labels, brands, stamps, and wrappers.

Requiring every person or corporation employing women or girls to provide suitable seats for their use.

Permitting the establishment of a system of manual or industrial training in the schools of cities having over 100,000 inhabitants.

Making it unlawful to burn natural gas in what are known as flambeau lights.

Accepting from the Hendricks Monument Association its gift of the Thomas A. Hendricks monument.

To punish bank officers, brokers, and others who receive deposits after insolvency.

Accepting the act of Congress approved Aug. 30, 1890, for the better endowment and support of colleges of agriculture and the mechanic arts in the several States, and designating Purdue University as the beneficiary under the act.

To create a firemen's pension fund, for the pensioning of disabled firemen, and the widows and dependent children, mothers, and fathers of deceased firemen.

Requiring coal-mine operators to keep accurate scales of standard manufacture at their mines for the weighing of coal, and to have them tested daily, authorizing miners to appoint a check weighman to protect their interests in the weighing of coal mined, providing that all coal shall be weighed before screening, that 80 pounds shall form a bushel, and 2,000 pounds a ton, making various regulations for the safety of miners while at work, prohibiting the employment in coal mines of boys under fourteen years and females of any age.

Education.—For the school year ending in June, 1891, a total of 521,841 children were enrolled in the public schools of the State, the average daily attendance being 369,060. The total number of children of school age in the State was 763,247. The whole number of teachers employed was 13,441, and the total number of school-houses 9,801. During the school year the sum of \$5,636,199.94 was distributed for the support of the schools. The permanent school funds of the State increased in value during the year by the sum of \$71,548.62, their value on June 30, 1891, being as follows: Common-school fund held by counties, \$7,360,271.24; congressional township fund held by counties, \$2,496,314.53; total, \$9,856,585.77.

At the State Normal School the total enrollment of pupils for 1891 was 1,086, against 1,009 for 1890. The receipts of the institution for the year were \$53,794.59, and the expenditures only \$37,372.57.

Prisons.—At the State Prison North, Michigan City, there were 735 prisoners on Nov. 1, 1890; during the year ensuing 417 were committed to the prison and 352 were discharged, leaving 800 remaining on Oct. 31, 1891. The total receipts from prison contracts and other sources were \$117,833.90, and the cost of maintenance \$104,284.56, showing that the institution is more than self-supporting. At the State Prison South 311 prisoners were received during the year ending Oct. 31, 1891, and 275 were discharged, making an increase of 36 for the year in the total number of prisoners. The average daily number was 592. The receipts for convict labor were \$74,945, and the disbursements for maintenance \$74,764.88. This institution is also self-sustaining.

At the Plainfield Reform School there were 516 boys on Nov. 1, 1890, 241 were received during the year ensuing, and 237 discharged, leaving 520 remaining on Oct. 31, 1891. The net cost to the State of maintaining the institution was \$32,985.

Agriculture.—The State Bureau of Statistics reports the following figures, showing an exceptionally large yield of agricultural products in 1891:

Wheat: Number of acres sowed, 2,891,922; product in bushels, 58,305,766.

Corn: Number of acres sowed, 3,637,927; product in bushels, 125,092,649.

Oats: Number of acres sowed, 897,952; product in bushels, 23,123,189.

Barley: Number of acres sowed, 21,888; product in bushels, 467,773.

Rye: Number of acres sowed, 44,840; product in bushels, 808,148.

Buckwheat: Number of acres sowed, 9,541; product in bushels, 151,450.

Flax seed: Number of acres sowed, 14,146; product in bushels, 116,460.

Clover hay: Number of acres, 1,208,672; product in tons, 2,109,814.

Timothy hay: Number of acres, 1,257,758; product in tons, 2,034,242.

Irish potatoes: Number of acres, 85,921; product in bushels, 7,883,701.

Sweet potatoes: Number of acres, 3,389; product in bushels, 247,086.

Tobacco: Number of acres, 13,818; product in pounds, 10,720,323.

Coal.—What is known as the Central or Illinois coal field extends over the southwestern portion of Indiana, underlying an area of about 7,000 square miles, and includes 19 counties; Warren County, lying at the northern limit, and a line drawn through the eastern boundary of Greene County marking its extent eastward. The coals are bituminous, excellent for steam and heating, but of little value for the manufacture of coke and gas. According to reports made to the State Mine Inspector, the production of coals has declined since 1887, when the total product reached 3,217,711 short tons. This is due to the introduction of natural gas into the cities and larger towns, together with the use of crude oil as fuel at Chicago and elsewhere. For the year 1889 the statistics of coal production, as compiled by the Federal census, were as follow: Number of regular mines, 94; local mines, 256; total product, 2,845,057 short tons (of which there were shipped from the mines for sale 2,527,112 short tons); total amount received for sale of

coal, \$2,887,852; average price at the mines, \$1.02 per ton; total number of employes, 6,532; total wages paid, \$2,201,044; number of persons employed underground, 5,782.

IOWA, a Western State, admitted to the Union Dec. 28, 1846; area, 56,025 square miles. The population, according to each decennial census since admission, was 192,214 in 1850; 674,913 in 1860; 1,194,020 in 1870; 1,624,615 in 1880; and 1,911,896 in 1890. Capital, Des Moines.

Government.—The following were the State officers during the year: Governor, Horace Boies, Democrat; Lieutenant-Governor, Alfred N. Poyneer, Republican; Secretary of State, W. M. McFarland; Auditor, James A. Lyons; Treasurer, Byron A. Beeson; Attorney-General, John Y. Stone; Superintendent of Public Instruction, Henry Sabin; Railroad Commissioners, Frank T. Campbell, Spencer Smith, and J. W. Luke; Chief Justice of the Supreme Court, Joseph M. Beck; Associate Justices, James H. Rothrock, Gifford S. Robinson, Josiah Given, and Charles T. Granger. These officials are all Republicans, except Gov. Boies.

Finances.—For the biennial period ending June 30, 1891, the receipts of the State treasury were as follow: From counties, \$3,120,287.96; from insurance companies, \$174,615.30; from State officers (fees), \$78,760.19; from telephone and telegraph companies, \$39,680.81; from miscellaneous sources, \$76,178.15; transfers from temporary school fund, \$30,957.31; balance on June 30, 1889, \$25,181.67; total receipts for the period, \$3,544,961.39. The disbursements for the period aggregated \$3,056,902.44, leaving \$488,058.95 as the cash balance on hand on June 30, 1891. At the latter date there were warrants drawn upon the treasury, outstanding and unpaid, amounting to \$33,960.42, leaving as the actual available surplus, \$454,098.53. The rate of State taxation for 1891 was 2 mills on the dollar. There is no State debt except a permanent bonded debt of \$245,345.19 held by the State School fund.

Education.—The following public-school statistics for the years ending July 1, 1890, and July 1, 1891, are reported by the State Superintendent:

ITEMS.	1890.	1891.
Children of school age.....	660,495	663,541
Enrolled in public schools.....	493,267	503,755
Average daily attendance.....	806,309	817,267
Male teachers.....	5,460	5,228
Female teachers.....	21,107	21,541
Number of school-houses.....	12,997	13,129
Value of school-houses.....	\$12,715,766	\$13,154,914

For the year ending July 1, 1890, the statement of school finances is as follows: Balance on hand July 1, 1889, \$2,976,676; receipts from district taxes, \$5,385,413; from semi-annual apportionment of State School fund, \$799,578; from other sources, \$651,885; total receipts, \$9,813,552; paid for teachers' wages, \$4,318,871; paid for school houses and sites, \$509,205; paid on bonds and interest, \$327,363; paid for fuel, rent, repairs, etc., \$834,831; paid for other purposes, \$720,046; total payments, \$6,710,316; balance on June 30, 1890, \$3,103,236.

At the State University there were 737 students in 1889-'90 and 890 in 1890-'91. The ex-

penses for the period were \$252,623.40. The Normal School contained 657 pupils in 1889-'90 and 746 in 1890-'91; its expenses being \$52,493.65. The students at the State Agricultural College in 1891 numbered 425, and the expenses were \$154,010.62.

Charities.—The Soldiers' Orphans' Home and Home for Indigent Children at Davenport had 426 inmates at the close of the year, of whom 255 were boys and 171 girls. The Soldier's Home at Marshalltown contained about 460 inmates at the same date.

In the Hospital for the Insane at Mount Pleasant there were 759 patients on June 30, 1889; in the two years following 643 persons were admitted and 586 discharged, leaving 816 on June 30, 1891. The current expenses for 1889-'90 were \$133,569.14, and for 1890-'91, \$139,161.60.

The Hospital for the Insane at Independence contained 766 patients on June 30, 1889; 617 were admitted in the succeeding two years and 550 discharged; leaving 833 on June 30, 1891. For the year 1889-'90 the cost was \$131,649.53, and for 1890-'91, \$131,051.89.

In the Hospital for the Insane at Clarinda there were 242 patients on June 30, 1889; in the two years following 313 were admitted and 246 discharged, leaving 309 on June 30, 1891. The current expenses for the two years 1889-'91, were \$113,933.98.

The Institution for Feeble-minded Children at Glenwood contained 432 pupils at the beginning and 457 at the close of the biennial period ending June 30, 1891. The number admitted during this period was 194; discharged, 167. The expenditures for the two years were \$185,968.98.

At the College for the Blind at Vinton 171 pupils were enrolled in 1889-'90 and 184 in 1890-'91. The expenditures for the two years were \$61,996.84.

Agriculture.—The following estimate of the product of Iowa farms in 1891 is made by the officers of the State Agricultural Society upon the basis of data collected by the society:

ARTICLES.	Product.	Value.
Corn, bushels.....	885,031,598	\$100,509,479
Wheat, bushels.....	2,071,968	25,741,089
Oats, bushels.....	115,810,800	26,636,484
Rye, bushels.....	2,051,400	1,393,410
Barley, bushels.....	4,528,689	1,311,467
Buckwheat, bushels.....	414,000	276,000
Potatoes, Irish, bushels.....	25,620,850	5,880,273
Potatoes, sweet, bushels.....	207,900	207,900
Grass seeds (estimated).....		1,750,000
Flax seed, bushels.....	3,154,016	2,523,212
Hay, tame, tons.....	5,582,300	38,497,340
Hay, prairie (estimated).....		6,800,000
Broom corn, tons.....	8,480	270,570
Sorghum, gallons.....	2,092,485	904,718
Butter, pounds.....	168,690,715	33,738,148
Cheese, pounds.....	5,000,000	450,000
Wool.....		300,000
Horses.....	1,095,300	76,726,750
Mules.....	42,739	3,322,618
Sheep.....	452,000	1,480,750
Hogs.....	5,921,100	29,475,236
Milch cows.....	1,278,612	28,973,975
Other cattle.....	2,680,247	47,038,841
Orchard and vine product.....		3,000,000
Hive product.....		650,000
Poultry product.....		5,600,000
Small fruits.....		750,000
Timber.....		3,000,000
Miscellaneous.....		10,000,000

Prisons.—At the close of the year there were 425 convicts in the State Penitentiary at Fort Madison, and 273 in the penitentiary at Anamosa. Of the Fort Madison convicts, 305 were employed by contractors, who pay the State for their labor prices ranging from 45 to 50 cents a day. The convicts at Anamosa are constructing the prison buildings.

At the Industrial School on June 30 there were 401 boys and 117 girls. The department for boys is at Eldora, and that for girls at Mitchellville.

Militia.—At the close of the year the National Guard numbered 2,466 officers and enlisted men, organized into six infantry regiments of eight companies each. They are well equipped and ready for active duty.

Railroads.—On June 30 there were 33 railroads in operation in the State, with a mileage of 8,440 miles. For the year ending on that day the number of passengers carried was 6,669,659, and the number of tons of freight, 19,769,150. The total earnings were \$43,102,399, an increase over 1890 of \$1,808,970. The number of employes was 27,580, or 296 fewer than in 1890.

The injunction case which was brought against the Railroad Commissioners by the Burlington, Cedar Rapids, and Northern Railroad Company for the purpose of testing the validity of the "joint-rate" law, and which was pending in the State Supreme Court at the beginning of the year, was decided on Feb. 9 in favor of the defendants. The objections to the constitutionality of the law were all overruled by the majority of the court, and its provisions were declared valid. The regulation by the State of joint through rates was declared not to be obnoxious to any constitutional provision, either of the State or of the United States. From this conclusion two of the five judges dissented. No progress was made during the year in the suits brought by the commissioners against various railroad companies to enforce the joint rates established under the provisions of the above-mentioned law.

Banks.—In the biennial term ending June 30, 1891, the number of savings banks increased from 50 to 83, and their deposits from \$13,125,058.88 to \$20,821,495.07, while the number of State banks increased from 80 to 122, and their deposits from \$7,271,515.22 to \$12,960,211.60.

Coal.—Almost half of the State is underlaid with coal. It is produced in 26 counties, and is of a quality generally well adapted for steam and heating. No cannel or gas coal is found in the State. The quantity produced during the census year ending June 30, 1880, from 25 counties was 1,461,116 short tons, valued at \$2,507,453 at the mines. The wages paid aggregated \$1,554,696, and the average number of persons employed was 5,024. The total product of all grades during the calendar year 1889 was 4,061,704 short tons, valued at \$5,892,220. The average number of persons employed during the year was 9,198, and the amount of wages paid \$2,903,291.

Political.—On June 10 the Prohibitionists met in State convention at Des Moines and nominated the following ticket for State officers: For Governor, Isaac F. Gibson; for Lieutenant-Governor, J. G. Little; for Justice of the Supreme Court, Daniel B. Turney; for Superintendent of Public Instruction, Mrs. M. H. Dunham; for

Railroad Commissioner, C. T. Hart. Before the election, candidates Dunham and Hart were succeeded on the ticket by Mrs. E. G. Cline and B. V. Draper, respectively. A platform was adopted favoring strict prohibition, free and unlimited coinage of silver, the Australian ballot reform, a State constabulary to enforce prohibition, and the immediate abolition of the whole United States internal-revenue system.

The Democratic State convention met at Ottumwa on June 24, renominated Gov. Horace Boies, and selected the following persons as his associates on the party ticket: For Lieutenant-Governor, Samuel L. Bestow; for Justice of the Supreme Court, L. G. Kinne; for Superintendent of Public Instruction, J. P. Knoepfler; for Railroad Commissioner, Peter A. Dey. The platform favors the Australian ballot system, denounces trusts and the importation of contract labor, urges the election of United States Senators by direct vote of the people, declares in favor of liberal pension laws, denounces the McKinley bill and the appropriations of the last Congress, opposes the non-residential ownership of lands and foreign syndicate ownership of American industries, and demands the restoration of unearned railroad grants.

The following are also a part of the platform:

We demand the repeal of the prohibitory liquor law, and in the interests of true temperance we favor the passing of a carefully guarded license-tax law which shall provide for the issuance of licenses in towns, townships, and municipal corporations, and which shall provide that for each license an annual tax of \$600 be paid into the county treasury and such further tax as the town, township, or municipal corporation shall provide, the proceeds thereof to go to the use of such municipalities.

We reaffirm our adherence to the doctrine of the control and regulation of railroads as now enacted into a law.

We reiterate our demands of one year ago for the free coinage of silver, and that it be made full legal tender for all debts, public and private.

On July 1 the Republican Convention met at Cedar Rapids, and made the following nominations: For Governor, Hiram C. Wheeler; for Lieutenant-Governor, George Van Houten; for Justice of the Supreme Court, Silas M. Weaver; for Superintendent of Public Instruction, Henry Sabin (renominated); for Railroad Commissioner, Frank T. Campbell (renominated). The platform praises the last Congress for the redemption of its pledges as to the revision of the tariff in the interest of home industry and for its work in behalf of liberal pensions for soldiers, approves the coinage act, commends the policy looking to reciprocal trade, declares that the party may be trusted to promote a plan of reform, Australian or otherwise, tending to protect the purity of the ballot, commends the law intending to protect our country from the immigration of paupers and criminals from foreign lands, declares in favor of equal taxation, favors the passage of the Conger land bill, and favors a liberal appropriation for the World's Fair.

On the leading question at issue in the canvass the following declarations were made:

In the interests of true temperance, and under the laws of Iowa, enacted by the representatives of sovereign people, the saloon was made an outlaw in this State. We charge that the outlaw has had the pat-

ronage, counsel, and protection of the Democratic party; that the Democratic party, as it has won power, has nullified the law, defied the authority of the State and the expressed will of its people, and that now appeal is made to the electors of the whole State for approval of the lawless work. We recognize that the issue is law against defiance of law, subordination against insubordination, and this State of Iowa against the Democratic party. We recognize that the issue is between the interest of true temperance and freedom and the rule of an indiscriminate traffic. We renew our allegiance to the people of Iowa and submit to them the determination of the issue, promising that the control of the next Legislature by the Democratic party means State-wide license, and that the control of the next Legislature by the Republicans means continued opposition to the behests of the saloon power through the maintenance and enforcement of the law.

There was also a fourth ticket in the field, nominated by the People's party and containing the following names: For Governor, A. J. Westfall; for Lieutenant-Governor, Walter S. Scott; for Justice of the Supreme Court, T. F. Willis; for Superintendent of Public Instruction, C. W. Bean; for Railroad Commissioner, D. F. Rogers.

A long and interesting canvass followed these nominations. Strenuous efforts were made by the Republicans to regain control of the office of Governor, which they lost for the first time in 1890, but they were somewhat divided regarding the policy of defending the prohibitory law, while the Democrats were united in denouncing it as a failure and in demanding high license. The contest turned chiefly on local issues, of which the liquor question was by far the most prominent, and the result seemed to indicate a change in popular feeling in the State upon this question. At the November election the entire Democratic ticket was successful, Boies receiving 207,575 votes; Wheeler, 199,759; Westfall, 11,918; and Gibson, 962. The plurality of Bestow for Lieutenant-Governor was 4,242; of Kinne for Justice of the Supreme Court, 2,977; of Dey for Railroad Commissioner, 7,946; and of Knoepfler for Superintendent of Public Instruction, 829. As a result of the election for members of the General Assembly, the Senate of 1892 will contain 25 Democrats, 24 Republicans, and 1 adherent of the Union Labor party; the House will contain 53 Republicans, 46 Democrats, and 1 member of the People's party.

ITALY, a constitutional monarchy in southern Europe. The Parliament consists of a Senate composed of members nominated from among citizens distinguished in professional or public life, or who pay 3,000 lire in taxes per annum, and a House of Deputies numbering 508 members, who are elected on collective tickets of two or three for each department. The elective franchise is the right of all adult males who are able to read and write and pay 20 lire or francs in taxes. The reigning king is Umberto I, eldest son of Vittorio Emanuele, whom he succeeded on Jan. 9, 1878, when not quite thirty-four years old. The chief of the ministry is Francesco Crispi, who was first appointed on July 29, 1887, as the successor of Depretis. In the beginning of 1891 the Cabinet was constituted as follows: President of the Council, Minister of the Interior, and Minister of Foreign Affairs *ad interim*, Francesco Crispi; Minister of the Treasury and Minister of Finance *ad interim*, Giovanni Giolitti,

appointed March 9, 1890; Minister of Justice and of Ecclesiastical Affairs, Giuseppe Zanardelli, appointed April 4, 1887; Minister of War, Gen. Ettore Bertolè-Viale, appointed April 4, 1887; Minister of Marine, Benedetto Brin, appointed March 30, 1884; Minister of Commerce, Agriculture and Industry, Luigi Miele, appointed Dec. 31, 1888; Minister of Public Works, Gaspare Finali, appointed March 9, 1889; Minister of Posts and Telegraphs, Pietro Lacava, appointed May 10, 1889. The Ministry of Finance was subsequently intrusted to Signor Grimaldi.

Area and Population.—The area is 286,588 square kilometres, with a population estimated in the beginning of 1890 at 30,947,306. The average annual mortality in 1862-'66 was 30.06 per 1,000; it decreased to an average of 27.7 in 1883-'87, and to 25.6 in 1889. The mortality of children under a year old sank from 225 per 1,000 in 1868-'72 to 196.8 in 1888. A further improvement is found in the decline in endemic and infectious diseases. Nevertheless, in 1888 the deaths from infectious diseases in Italy were 27.6 per 1,000. In 1885 there were 6,401 communes in Italy in which not a single drain existed. The percentage of deaths from smallpox is higher in Italy than in any other European country, amounting in 1888 to 59.4 per 100,000. In 1888 vaccination was for the first time made compulsory in Italy. In 26 years the number of pupils attending elementary schools has risen from 1,000,000 to 2,300,000. The illiterates entering the army have fallen from 64 per cent. in 1866 to 42.9 per cent. in 1888. In Germany the proportion of illiterate recruits is 1.2 per cent., and in France 10 per cent. In higher Italian educational institutions the increase has been considerable. The more serious forms of crime show a tendency to decrease, although acts of violence are still more common in Italy than in most European countries. Italy stands highest in Europe in homicides and sanguinary assaults. The number of prisoners decreased from 80,000 in 1880 to 68,000 in 1888.

Finances.—The budget estimate of revenue for the year ending June 30, 1891, was 1,850,248,142 lire, and the estimate of expenditure was 1,872,133,271 lire, adding 21,885,129 lire to the deficits of the previous three years. The deficit of 1889-'90 was stated in the budget estimate at 56,509,078 lire; in 1888-'89 the actual excess of expenditure was 230,461,086 lire, and in 1887-'88 it was 57,151,120 lire. The public accounts divide receipts and expenditures into four categories: (1) effective receipts and expenditures; (2) movement of capital; (3) construction of railroads, etc.; (4) receipts and expenditures *d'ordine*. The fourth category embraces the working expenses of the state domains, interest on the funds for securing paper money, treasury deposits, and loans for pensions, etc., in which receipts balance expenditures, as also in the third category. The receipts and expenditures in the second and third categories are classed as extraordinary. The ordinary receipts in the first category amounted to 1,588,022,815 lire, and the extraordinary receipts to 19,986,962 lire, making a total of 1,603,009,477 lire. The total expenditure in this category was reckoned at 1,613,972,792 lire, leaving a deficit of 10,963,318 lire. In the second category the receipts were estimated at 32,160,589 lire, and ex-

penditures at 43,082,400 lire. The total on each side of the account in the third category was 145,745,968 lire, and in the fourth 69,332,118 lire. Adding the latter sum to the ordinary effective revenue, the total ordinary receipts are found to be 1,652,354,663 lire, while the ordinary expenditures amount to 1,579,911,814 lire, giving a surplus of 72,443,319 lire. The sum of the extraordinary receipts is 197,893,509 lire, and that of extraordinary disbursements 292,221,957 lire, showing a deficit of 94,328,448 lire. Of the extraordinary expenditure, 165,816,114 lire were for public works, 32,461,600 lire for the army, and 13,200,000 lire for the navy. Of the extraordinary revenue, 11,886,580 lire were raised by the sale of property and 16,530,000 lire by new loans.

The revised budget for 1890-'91 showed a deficit of 45,000,000 lire, the previous estimate having made no provision for a falling off of over 20,000,000 lire in the revenue. This deficit was reduced by economies to 36,000,000 lire. The expenditure on public works was fixed at 194,251,698 lire; the ordinary expenditure for war at 259,620,402, and the extraordinary at 48,186,120 lire; the ordinary naval expenditure at 108,797,418, the extraordinary at 14,659,376 lire.

The interest on the consolidated debt, 5 per cent., except a small portion, amounted to 449,092,139 in 1889-'90. The interest on the debts separately inscribed, and on other terminable debts, varying from 3 to 6 per cent., was 21,178,408 lire for the former and 92,375,752 lire for the various obligations not in the separate book, while the sinking fund laid aside for both amounted to 1,340,353 lire for the year. The interest on treasury bonds and other floating debt was 13,113,635 lire, which, with the annuity of 3,225,000 lire set aside for the Pope, makes the total interest on the public debt 578,984,932 lire. The capital of the debt amounted to 11,241,000,000 lire, which is equal to \$75 *per capita*. The interest is about \$3.50 a head, and amounts to four sevenths of the total value of exports of domestic products. The property owned by the state is estimated at 6,506,404,645 lire, consisting of 526,479,530 lire of assets in the treasury, 707,111,479 lire in loans, real estate, etc., 3,398,800,658 lire in property of a reproductive character, 1,676,993,668 lire in buildings and other property used in the service of the state, and 197,019,310 lire worth of material in use in the army and navy. The revenue from state property in 1888-'89 was 68,214,394 lire from railroads, 4,368,366 lire from ecclesiastical property, and 12,304,339 lire from other resources, making 84,887,099 lire in all. The aggregate revenue of the communes of Italy in 1889 was 640,340,410 lire, and the revenue of the provinces 118,625,599 lire. The debt of the communes was 883,138,464 lire, and that of the provinces 172,409,115 lire at the beginning of 1886.

The Army.—The permanent army in 1890 numbered 14,211 officers and 248,036 men of all arms in active service, and 11,842 officers and 575,103 men on unlimited leave of absence. The mobile militia had 3,776 officers and 368,510 men on the rolls, and the territorial militia 5,224 officers and 1,025,621 men. This gives an aggregate nominal strength of 2,852,323 fighting men as the official estimate. The African corps, which forms a part of the standing army, consisted in

1890 of 109 officers and 3,180 men. The native levies in Africa numbered 152 officers, of whom 104 were Italians, and 5,295 men, including 108 Italian under-officers.

The Navy.—The Italian navy, which is counted the third strongest in the world, had seven great ironclads of from 11,000 to 13,898 tons, built between 1876 and 1888, all capable of steaming from 15 to 18½ knots an hour, armed with the heaviest ordnance, and having from 18 to 22 inches of armor over the vulnerable parts. An eighth, the "Sicilia," of 13,268 tons displacement, was launched at Venice on July 6, 1891. Two others, the "Re Umberto," of equal size, and a still larger one, the "Sardegna," were nearing completion. There were five armored battle ships of older type and under 5,000 tons displacement, a torpedo ram of 3,020 tons, three other second-class armor-clads of 3,530 tons, and seven under 3,000 tons, while eight more were building or waiting for engines or armament.

Commerce and Production.—Although the financial position of the Government has grown steadily worse, and the banking and currency system, disorganized by the acceptance of inflated values and shadowy securities that have since collapsed, now engages the anxious attention of statesmen, national wealth has accumulated in Italy faster, it is believed, than in France; and in spite of the depression that has succeeded, the era of speculation, it is still growing at the rate of 1,000,000,000 francs a year. The paper money issued by the six banks of issue was officially ascertained to be 1,102,900,000 lire on June 30, 1891, which is 200,000,000 lire in excess of the amount authorized by law. The excess of this circulation over the metallic reserve of 429,100,000 lire is, to a considerable extent, based on loans made on property now unsalable during the progress of the building mania. The illegal excess of the emissions is believed by experts to be nearer 500,000,000 lire. The amount officially established was legalized by the law of June 30, 1891, authorizing the banks to issue notes to the amount of four times their capital, on condition that one third of the circulation shall be protected by a metallic reserve. The notes of the other banks, though legal tender, are not regarded with the same confidence as the state notes. The circulation is kept on a gold basis, notwithstanding the loss of the French trade, partly compensated for by increased exports to Germany and other countries, and by the constant influx of gold spent by tourists and foreign residents, estimated at 500,000,000 lire a year, which exceeds the annual deficiency in the balance of trade of 325,000,000 lire for the past two years. The produce of the six great crops (wheat, maize, other cereals, rice, oil, and wine) increased from about 97,000,000 hectolitres in 1860 to 134,000,000 in 1890. The product of the mining industry in 1871 was valued at 42,000,000 lire, and gave employment to 30,000 men; in 1889 the value was 53,500,000 lire, and the number of men employed was 49,000. The pay of operatives in all branches of industry increased greatly between 1862 and 1869, except that of women in silk factories, owing to the crisis in the trade, and the workmen in the sulphur mines, owing to decreased market value. While a laborer in 1862 had to work

one hundred and ninety-five hours in order to earn the price of 100 kilos of wheat, in 1889 he would have to work only ninety-five hours.

The total value of the special imports in 1889 was 1,391,154,246 lire, and that of the special or domestic exports 950,645,760 lire. The imports of the precious metals were 49,612,800 lire; exports, 55,058,100 lire. The export trade shows a partial recovery from the sudden drop from 1,028,231,726 lire in 1886 and 1,002,136,762 lire in 1887 to 891,934,539 lire in 1888. The total for 1889 is almost exactly the same as that for 1885. The cultivated area in Italy is about 36 per cent. of the total superficies, while 12 per cent. is under forest and 13 per cent. is waste. Over 69 per cent. of the people are dependent on agriculture. The value of the chief articles of agricultural produce in 1889 was estimated at 2,889,943,399 lire, in which sum wine stands for 985,869,170 lire; wheat, 680,281,122 lire; olive oil, 332,625,150 lire; Indian corn, 276,545,999 lire; silk cocoons, 133,278,709 lire; rice, 103,105,700 lire; acid fruits, 72,967,712 lire; legumes, 71,353,790 lire; chestnuts, 65,533,641 lire. The other products contained in the list are hemp, oats, potatoes, barley, flax, rye, and tobacco. The imports of cattle in 1889 were 42,896, and the exports 26,282 head; 54,830 hogs were exported and 12,002 imported; and of sheep, 49,508 were exported and 7,381 imported. The woolen industry required 95,991 quintals of imported wool, while 17,722 quintals were exported. The yield of silk cocoons was 75,678,000 pounds, against 96,786,173 pounds in 1888. The value of animal produce, including cocoons, milk, wool, meat, etc., was 1,180,000,000 lire; and the produce of the forests, including fire-wood, charcoal, timber, and other products, with the exception of chestnuts, was 88,000,000 lire. The sulphur industry represents half the total value of mineral products, and employs more than half the labor engaged in mining. Next in importance are the zinc and lead mines. Almost equal to the sulphur mines in the number of men employed, and quite so in the value of their produce, are the marble quarries. The growth of Italian industry is shown in the increase of the coal and coke imports from 516,000 tons in 1867 to 4,000,000 tons in 1890. A large proportion of the agricultural products, such as wine, silk, and fruits, is raised for exports. The trade with the United States in Italian products has expanded much faster than the trade in American products in Italy, which are so burdened with the profits of intermediate English and German traders that they can not compete with European manufactures. The Italians are so well disposed toward American goods that Manchester sheetings, German machinery and implements, and Russian petroleum are spuriously labeled as American. The chief imports from the United States are raw cotton, tobacco, resins, and lard. In addition to these a market could be found for lumber, coal, grain and flour, candles, clocks and watches, machinery, edge tools, machine-made articles, cotton piece goods and yarns, and canned fish, meats, and vegetables. The prohibitory decree against the importation of American pork products was removed in October, 1891.

Navigation.—The number of vessels in the registered merchant navy on Jan. 1, 1890, was

6,721, of 824,474 tons; of which 667, of 481,439 tons, were engaged in ocean commerce; 387, of 140,260 tons, in long coasting voyages; and 5,667, of 202,775 tons, in the ordinary coasting trade and in the fisheries. Of the first class 75, of 123,122 tons, of the second 43, of 31,330 tons, and of the third 161, of 27,797 tons, were steamers. The number of Italian vessels entered at Italian ports in 1889 was 107,188, of 13,312,182 tons, and the number of foreign vessels was 9,602, of 7,594,133 tons.

Railroads.—A large part of the railroad system is the property of the state. In 1885 all the state lines were leased to private companies on contracts running sixty years, though terminable at the end of twenty or of forty years. The net, which comprised 2,561 kilometres of railroads in 1861, had grown in 1891 to 13,068 kilometres, exclusive of 2,262 kilometres of steam tramways. The lines are the Mediterranean, with a length of 4,770 kilometres; the Adriatic, 5,177 kilometres; the Sicilian, 714 kilometres; the Sardinian, 759 kilometres; others, 1,648 kilometres. The receipts in 1887 amounted to 236,266,276 lire, of which 95,132,681 lire were from passengers. The railroads, built to a large extent for political objects connected with the unification of Italy, and extended beyond the present needs for the sake of satisfying the various provinces, have been one of the main causes of the disorder in the public finances. The ordinary expenditure on public works in 1889-'90 was 29,496,155 lire, and the extraordinary 164,755,543 lire, to which must be added the interest on the railroad bonds, amounting to 138,000,000 lire. The debt bears interest at 4 per cent., while the returns, deducting working expenses, were only 1.41 per cent. on the Mediterranean line, 1.63 per cent. on the Adriatic, and on the Sicilian and Sardinian lines there was a large net loss on the working expenses.

Change of Ministry.—Signor Crispi obtained the general support of the country in the elections of September, 1890, on the programme of the continuance of the triple alliance and existing armaments without new taxation, and the rectification of the budget by retrenchments. In the previous three years the ministry had effected nearly 100,000,000 lire of economy in the expenses. The diminution of receipts by 20,000,000 lire made the deficit in 1890-'91 45,000,000 lire. In the corrected budget for 1891-'92 revenue was reckoned at 16,500,000 lire less than in the first estimate. Minister Giolitti, by cutting down expenses, reduced the deficit for that year to 38,000,000 lire, and this was further reduced by Signor Grimaldi to 29,000,000 lire. This trenched so close upon the necessary requirements of the Government that Signor Crispi despaired of being able to go further without destroying the efficiency of the army and of the public services. As he was unable to carry out his pledge, the conditions for a crisis were present in spite of the great majority that he commanded. His Conservative supporters demanded a larger share in the Government, and if it should accord it he would lose followers on the left of the Chamber, with whom he was more closely affiliated. In his financial statement Signor Grimaldi applied for increased duties on certain articles of import and a new excise duty on the manufacture of alcohol. The measure

was opposed by the Extreme Left, and was criticised by members of the Right, who suggested a further paring down of the military and naval budgets. Signor Bonghi, of the Conservative Opposition, who had been a member of Minghetti's Cabinet, taunted Signor Crispi with following a policy that was disorganizing at home and humiliating abroad. Goaded by these strictures, the Premier declared that the financial policy of the Government of the Right had been no better, and that the Minghetti Cabinet, which was defeated over the budget of 1876, had pursued a servile policy abroad. This provoked loud protests, and Signor Finali, the Minister of Public Works, left the ministerial bench. Signor Crispi went on to say that the country demanded the adoption of the bill, which would show that Italy desired a strong Government, not one that was "in a chronic state of doubt and uncertainty." Amid the uproar that followed, the reporter of the budget committee, Signor Luzatti, who had made a speech in favor of the bill, announced that he would give his vote against the Government, and took a seat with the Opposition. A motion to proceed to the order of the day was proposed and accepted by the Government after Signor Crispi had disclaimed any intention of offending his supporters on the Right, and the Government was defeated by 186 votes against 123. The Premier then gave notice of his resignation, which he tendered to King Umberto the same day, Jan. 31, 1891.

The unlooked-for defeat of the Crispi Administration was erroneously supposed in France to signify the reversal of Crispi's policy and the end of the triple alliance. The King found it difficult to find a successor to Crispi. The Liberals held a meeting with a view to the reconstitution of the historical Left and the formation of a purely Liberal ministry that would have the support of the 45 members of the Extreme Left, and could count on a majority of 300 against 200. This combination failed because Signor Zanardelli and Signor Nicotera could not compose their differences, and Zanardelli, to whom the King first applied, advised the recall of Crispi. He could not return because there was no prospect of a change in the conditions that led to his retirement. Signor Bertole Viale, and Signor Brin were consulted in succession, but neither was able to form a ministry. The Right demanded economies in the budget amounting to 40,000,000 lire. The Marquis di Rudini was called upon, and he came to an understanding with Signor Nicotera and Signor Saracco, who joined him in an attempt to get together a Cabinet pledged to the desired savings. Not being able to agree on the choice of their colleagues and the division of the offices, the combination was weakened by the withdrawal of Signor Saracco. The new ministry, as constituted finally on Feb. 9, was a coalition not only of Liberal and Conservative groups, but of both friends and opponents of Crispi's home and foreign policy. It was composed of the following members: President of the Council and Minister of Foreign Affairs, the Marquis di Rudini; Minister of the Interior, Signor Nicotera; Minister of Public Works, Signor Branca; Minister of Finance, Signor Colombo; Minister of War, Gen. Pelloux; Minister of Agriculture, Signor Chimirri; Min-

ister of the Treasury, Signor Luzatti; Minister of Public Instruction, Signor Villari.

The House of Deputies, which had adjourned on the resignation of Signor Crispi, was called together to hear the new Premier's statement on Feb. 14. He said that the Cabinet would conquer or fall under the standard of retrenchment. It proposed to effect an equilibrium in the budget by cutting down all estimates, including those of war, the marine, and the African department, and would not impose fresh burdens on the tax payers. A bill would be introduced dealing with banks of issue, but no bills of a political character would be brought forward. The foreign policy would be to maintain stanchly the league of peace, and at the same time dispel doubt and mistrust that had arisen in the relations with France. The change that the Marquis di Rudini had advocated from *scrutin de liste* to the single-district system was excluded from the programme. The bills of the late Administration, imposing duties on alcohol and heavy oils, abolishing certain prefectures, and reforming administrative districts, were withdrawn. The Parliament was adjourned several times to allow the new Government to make their financial plans. Signor Zanardelli led the Opposition; the Extreme Left, including Republicans, Socialists, and Irredentists, by whose votes the Crispi ministry had been overthrown, gave a qualified support to the Government; and Signor Crispi maintained a neutral and expectant attitude, waiting for the development of the financial scheme. Retrenchment in all departments was found to be impracticable, because in some economy had already been carried to the limit of efficiency. Legislation instituted by the late Government for the purpose of making certain taxes more productive was gone on with, and was expected to yield an increase of about 10,000,000 lire in the revenue. In presenting the revised budget, on March 21, Signor Luzatti stated that the deficit for 1890-'91 would reach 70,000,000 lire, and that the floating debt was 450,000,000 lire. For the coming year the Government proposed to restrict the area occupied in Africa to the triangle of Masowah, Keren, and Asmara, and to reduce the expenditure for the maintenance of the Italian colony in Africa from 18,000,000 to 6,000,000 or 7,000,000 lire. Salaries were cut down in the consular service and other departments. In discussing the revenue estimates for 1891-'92, on June 24, the Minister of the Treasury promised that the expected deficit was only 5,424,000 lire, which would be cleared away by increased receipts and fresh economies. In August the deficit was reckoned by friends of the Government at 20,000,000 lire, and by the Opposition at thrice that figure. The Italian schools in the East, in which 80,000 children were instructed, were suppressed. Railroad building was stopped for the future, except on lines which were contracted for, which would require 30,000,000 lire. The Marquis di Rudini, in November, expressed the intention of covering railroad expenditure by the ordinary revenue. He expected to include pensions in the ordinary budget. A prospective deficit of 21,000,000 lire in 1892-'93 would be avoided by means of fresh measures, but the efficiency of the army and navy would

not be impaired. If he could not place the state in a position to dispense with borrowing, he said he would resign. A saving of 68,000,000 lire had been effected in the budget of 1891-'92, and 40,000,000 lire more would be saved in the budget for 1892-'93.

The Rudini ministry accepted the foreign policy of Crispi with all its obligations and renewed the triple alliance, notwithstanding the growing discontent with the burdens that it imposes. The new commercial treaties with Germany and Austria-Hungary, and the one with Switzerland that was still under discussion in the last months of the year, held out prospects of an improvement in the economical situation, by an increase in the exports of agricultural products. In negotiating the treaties the Government took care not to injure the manufacturing interests. In reference to the rumored adhesion of Great Britain to the triple alliance, the Marquis di Rudini answered an interpellation in the Senate on June 29 by saying that Italy sought to have understandings and agreements with powers animated with a desire to preserve peace and maintain the existing balance of power, and especially the *status quo* in the Mediterranean. Some years before there had been an exchange of views between Italy and Great Britain, and both countries had proposed to co-operate for the maintenance of peace and the *status quo*. An agreement with Germany and Austria had already been arrived at for the renewal of the treaties of alliance that would lapse in 1892. These alliances, he declared, firmly and sincerely maintained, "will assure the peace of Europe for a long time to come." At an interview between M. de Giers and King Umberto and his ministers, at Monza, on Oct. 14, the Russian minister was reported to have announced and explained the Franco-Russian *rapprochement*, saying that France while isolated was subject to anxieties, freed from which she would cease to be an element of uneasiness for other countries; as for Russia, the idea of leaning on so powerful a state was dictated as much by state reasons as by the mutual inclinations of the two nations; France can count on Russia so long as she is neither aggressive nor provoking. The Czar desired to learn the pacific sentiments of King Umberto. Between Russia and Italy the only points of difference that could arise were concerning the Dardanelles question, already settled, and the Bulgarian question, which the Czar had no desire to stir up so long as Europe enjoyed the present tranquillity.

The Roman Question.—The change of ministers removed some of the minor causes of friction that had arisen from Crispi's aggressive attitude toward the Church without altering the essential features of the ecclesiastical policy of the Government. The projects concerning divorce and the deposition of bishops were abandoned. The policy of the new Government the Marquis di Rudini summed up in the words, "No concession, no provocation, no condonation of affronts to the civil power." The tension caused by the renewal of the triple alliance and the new commercial treaties hastened the partial *rapprochement* between the Vatican and the Freycinet ministry in France. The fortunes of the monarchical parties had fallen so low and the parties

that had allied themselves with the Church in France had become so weak and disorganized, that the diplomatists of the Vatican thought it expedient to accept and approve the republic in France, and in doing so they calculated on receiving some support from France for the claims of the Papacy to Rome. The present Pontiff, while ostensibly clinging to the pretensions advanced by Pius IX to the full restoration of the temporal power, has permitted compromise propositions to be put forward under his auspices. By removing the ban of *non expedit* imposed on Italian Clericals by his predecessor and himself, by which they are not permitted to vote in national elections or to be elected to Parliament, he can change the balance of power in party politics and bring in a Government of the Right that would not be so purely hostile to Papal pretensions as the Left and the Right of the Chamber are equally, so long as the rule of electoral abstention is kept in force. As a preliminary condition, it is necessary to secure the acceptance of his compromise scheme by a strong enough combination of foreign governments, either the German and Austrian or the French and Russian, or all of them. This scheme has been supposed by some to involve the substitution of an international guarantee of the powers for the Italian law of guarantees of May 13, 1871, the removal of the Government and royal court to some other city, and the conversion of Rome into a free city. If this plan can not be carried out, it is supposed that Leo X would accept an arrangement by which the court of the Vatican and that of the Quirinal can be held in Rome at different periods of the year. A large section of the Clericals, comprising a few of the more Liberal of the prelates and many laymen of the provincial aristocracy, are in favor of participating in Italian politics on the simple condition that the *status quo* represented by the law of guarantees shall receive an international character. A part of the irreconcilable element, old ecclesiastics and nobles, look forward to the downfall of the united monarchy, and the establishment in its stead of a federal republic in which the territorial sovereignty of the Pope will find its natural place. The Papal question was brought before the public view in a practical shape by an untoward incident springing from the accentuation of the national jealousy between the French and the Italians. A vast number of pilgrims, societies of French Catholic working men and others, went to Rome in the beginning of October, 1891, to do homage to the Pope and receive his benediction. A party of these, on Oct. 2., insulted the memory of Vittore Emanuele by spitting on the visitors' register at his tomb in the Pantheon, and shouting perdition to him and to King Umberto and long life to the Pope. Three very young men, Michel Trufe, a student, Maurice Grégoire, a lawyer, and Eugène Choncarry, a journalist, were arrested for the outrage. The affair caused a great commotion in Rome. The bands of pilgrims were mobbed, thousands of young men paraded the streets cheering the King, public meetings were held and anti-French speeches delivered, great numbers of citizens went to the Pantheon to inscribe their names in the visitors' book at the tomb. The police prevented serious disorders, and the Government

authorities, seeking to minimize the international character of the incident, simply conducted the arrested pilgrims to the frontier, instead of prosecuting them for the desecration of a tomb and for committing "an act tending to diminish the independence of the state and to destroy its unity." In his speech delivered at Milan on Nov. 9, the Premier said:

We have established in our midst the Papacy, which sometimes assumes a threatening attitude; but its sphere of action is limited to the exercise of spiritual power, not only by the law, which will not be lightly contravened, but also by almost unanimous consent even on the part of those who deem themselves most religious. The country's ecclesiastical policy has become traditional, and the honor and strength of the Kingdom of Italy will be scrupulously maintained. The deplorable incidents brought about by a few short-sighted persons will not make us deviate from that policy. Not for so slight a matter will we raise questions regarding the Constitution of the kingdom. Not for that will we tamper with the immovable statutory law of guarantees, the wisdom and expediency of which have been proved by long experience. Italy will not fail in the respect which she owes to the liberty of conscience and religious toleration which it is our boast to profess.

Labor Disturbance.—The working men's demonstrations on May 1 were attended with more excitement in Italy than elsewhere. Strong guards of soldiers were posted in the chief cities at points where they could aid the police in preserving order. At Rome an open-air meeting of 5,000 persons was held in the Piazza Santa Croce. Several Deputies were seated on the platform, and most of the speeches were moderate. Suddenly, while a working man named Vincenzo Landi was making a speech of a more violent character than the rest, the cavalymen stationed in the square were ordered to mount. The crowd began to run away when the Socialist Deputy Amilcare Cipriani shouted, "We must act if we are not cowards." A pistol shot was fired, and the next moment a hail of stones was poured down on the heads of the advancing soldiers, who charged on a trot and dispersed the crowd, killing some and injuring several hundred, among them the Deputies Cipriani and Barzillai, who were arrested with 300 or 400 more persons. Among the police and military 10 men were wounded. In Florence the police attempted to break up a meeting on account of an incendiary speech, and when the mob began to stoneshop windows the streets were cleared by a cavalry charge. In Naples two large gatherings were dispersed by the police and the orators arrested. On the day following, a strike began among the workmen connected with the building trades in Rome. On May 4 a fire, supposed to be incendiary, broke out in the barracks of the carabinieri at Rome. The Government was sharply assailed in the Chamber for the action of the authorities on May day and for the arrests that continued to be made. The attack was led by Deputy Imbriani, who was supported by all the Radicals, and several stormy discussions of the subject took place.

The Mala Vita.—A secret society, organized for criminal purposes, of the kind that formerly existed in southern Italy, but were thought to have been stamped out, was discovered early in 1891, and in April 179 persons were tried at Bari as being concerned in the conspiracy. The so-

ciety was called the Mala Vita. Its existence was betrayed by some of the members. A person wishing to become a member had to be introduced to the chief, who would instruct another associate to institute a rigorous inquiry as to whether the applicant was worthy. All these negotiations were conducted in thieves' slang. There were three grades of members, each possessing a separate head—the Camorristes, the Picciotti, and the Giovanotti, or novices. When the admission of a new associate had been resolved upon, a meeting of the section in which he was to be enrolled was convened. He took the oath with one foot in an open grave, the other being attached to a chain, and swore to abandon father, mother, wife, children, and all that he held dear in order to work out the objects of the association. Humility and self-abnegation were imposed upon the novice by the terms of the oath. No one was allowed to join the organization who had been a gendarme, a policeman, or a custom-house officer. The principal object of the society appears to have been brigandage. The booty obtained in predatory expeditions and the ransoms derived from the capture of unlucky travelers were thrown into a common stock, a certain proportion being, however, specially set apart for division among the Camorristes, whose duty it was, within eight days, to divide the remainder among all the members of the organization, an exceptionally large share being claimed by the chief. Breaches of the society's rules and disobedience to the orders of a supreme officer were punished by torture and death, the executioners being selected by lot. In the event of any person thus selected failing to carry out the society's decrees, he was visited with the same penalty. When a member was promoted to the superior grade and became a Camorriste, he had to undergo a ceremony similar to that which accompanied his first admission to the society, with certain additions, such as a mock combat with daggers. He was also obliged to have designs or hieroglyphics tattooed upon his body, by which he could at any time be identified. Many of the prisoners were women. The outcome of the trial was that 175 prisoners out of 179 were convicted as members of the criminal association. Extraordinary precautions were taken to protect the witnesses for the prosecution, who received threatening letters from the families of the accused, denouncing them as objects of the vengeance of the society. The police afterward unearthed an affiliated organization at Taranto, and many arrests were made.

Peace Congress at Rome.—An International Peace Congress was opened on Nov. 12, by ex-Minister Bonghi, its president. The five questions on the programme, with the answers given, were as follow:

(1) Pedagogical reforms. The principles of peace shall be propagated in the schools. We will try to infuse the students of Europe and America with a spirit of respect and consideration for foreign nations. (2) Peace and disarmament as questions of political and social economy. The main speaker on this subject was Capt. Siccardi, and his argument was that the maintenance of excessive armaments causes war, and does not avert it. The congress urges upon peace societies to agitate the subject of disarma-

ment, and to call for the establishment of courts of arbitration to precede disarmament. A resolution was also adopted to urge arbitration for the settlement of disputes between employers and employes. (3) The establishment of an international peace bureau. Bern was selected as the seat of such a bureau, as a central place of information concerning the labors of the various peace societies. The bureau is not to exercise any authority, nor to control the labors of any peace society. Hodgson Pratt, Frederick Bajer, Ducommun, Mazzolini, and Love were elected to compose the bureau. (4) The establishment of a yearly conference for the purpose of securing a communion between the universities of Europe and America, particularly with respect to all questions of arbitration. The congress voted for a yearly conference of teachers and professors, and for unions of the students to meet at the various universities in turn. (5) The means whereby the public press may be influenced. The public press is too often the cause of a nation's quarrels. It was voted that the peace societies can not attain any lasting results so long as public opinion does not strive against national hatred and war ideas. The press has been too willing to encourage national prejudices. The next congress will be convened at Bern in August, 1892.

Colonies.—Italy possesses and actually occupies in Africa the country around Massowah, the sea-port giving access to Abyssinia, with Keren and Asmara, having a total area of 3,100 square miles; the Dahlak Archipelago, with an area of 420 square miles; and also the territory of As-

sab Bay on the Red Sea, opposite Aden, 548 square miles in extent. A protectorate is claimed over the Empire of Abyssinia, and, by an arrangement with Great Britain, Somaliland, as far southward as the limit of the British East Africa Company's territory, is recognized as lying within the Italian sphere of interest, which extends inland to the borders of the Egyptian Soudan. Italy has the right to occupy the town and district of Kassala, if strategic considerations require such a step, but has agreed to surrender the place to Egypt if the latter should wish to resume her rule in the district. In this region the line of demarkation between the Italian sphere and that of England runs from Ras Kasar on the Red Sea, through Bisha, which is between Kassala and Keren, to Famaki. The Italian Government has decided for the present to restrict military operations to the protection of Keren, Asmara, and Massowah. Degiac Mangascia, who is recognized as ruler of Tigre under the Emperor Menelek, was approached with a view to establishing good neighborly relations. A diplomatic representative was accredited to Degiac Makonnen, the Emperor's representative in Harrar, with whom friendly relations were established already. Overtures were made to Menelek for peaceful and cordial relations, based on assurances that Italy had no design to raise internal difficulties for him or to weaken his independence. Gen. Gandolfi, governor of the Italian colony of Erythria, was specially appointed to establish a civil administration, and to separate the duties of the governor from those of the military commandant.

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JAPAN, a country in the north Pacific Ocean, east of China, between longitude east 156° 32' and 122° 45' and latitude north 50° 56' and 24° 6'. The most eastern portion of the empire is the island of Shimushiu in the province of Chishima, and the most western Yonakunishima in the Riu Kiu archipelago. The portion most northerly is the island of Araitoshima in Chishima, and that most southerly is Hatemashima in Riu Kiu. The Russian term Kurile and the Chinese name Liu Kiu or Loo Choo are no longer known in Japan, and both these archipelagos at the extreme ends of the empire are integral parts of Japan. The Government is a constitutional monarchy, at the head of which is the Emperor Mutsuhito, born Nov. 3, 1852, and officially the one hundred and twenty-third of the line of mikados. The Empress, Haruko, was born May 28, 1850, and declared Empress of Japan on the day of her marriage to the Emperor, Feb. 9, 1869. No children have been born of this union, but by the imperial concubines there are four sons and seven daughters, the last born Aug. 7, 1891, all of whom have died, except Yoshihito, born Aug. 31, 1879, proclaimed heir to the throne Aug. 31, 1887, and elected Crown Prince Nov. 3, 1889. There are ten imperial houses or families, from which heirs to the throne may be taken, and which furnish the princes who sit in the upper house of the Diet. Their total allowance

out of the civil list is 212,000 yen, the silver yen being worth 80 cents. The civil list for 1890-'91 required to be taken from the treasury 3,214,381 yen.

Area and Population.—The geodetical, trigonometrical, and geological survey of the whole empire is being steadily carried on. The planimetric calculations for five provinces have been brought to completion. The measurements corrected to Dec. 31, 1889, showed the coast line of Hondo, the main island, to be 4,882 miles, and of the whole empire to be 17,575 miles. The area of Hondo is 91,819 square miles, and of the empire 155,962 square miles. The number of islands under official knowledge or inspection is nearly 4,000, but of these only 520 have a coast line of 1 *ri*, or 2.5 miles, or are inhabited, or serve for light-houses or other guides to navigation. For meteorological purposes the empire is divided into 7 divisions, in which are 31 well-equipped stations of observation and record. Politically, there are 85 provinces, 804 counties, or shires, 42 large cities (on communal organization of 1888), 1,111 towns, and 3,374 villages. The taxes are levied on private property as follows: Rice fields, 110,213 acres; ordinary meadow or arable land, 92,048 acres; land occupied by buildings, 12,737 acres; forests, 292,238 acres; other lands, sea-shore, springs, waste, etc., 42,669 acres; total, 552,424 acres. The property thus assessed is divided into 85,440,000 separate lots

or parcels, held by 6,035,000 proprietors, though in a small minority of cases owners hold several properties in different districts. The number of prefectures or local governments having executive officers appointed by the Emperor, local assemblies, courts, etc., is 47; subprefects, 567; towns having mayors, 11,687; the prefectures having an average population of 852,596 persons, and the subprefectures of 70,006.

According to the census returns compiled by the Department of Home Affairs, there were in Japan on Dec. 31, 1890, 7,806,052 houses and 40,453,461 inhabitants—20,431,997 males and 20,022,364 females. Of these, 3,768 were nobles, 589 being heads of families and 3,179 members of families; 2,008,641 were of the *shizoku* or gentry class, of whom 432,044 were heads and 1,516,597 members of families; 38,441,052 were of the *heimin* or commons, 7,762,322 being heads and 30,679,987 members of families. Foundlings not yet adopted numbered 4,725, and prisoners unregistered as citizens 1,018. Compared with the census of 1889, these figures show a decrease of 34,820 houses and an increase of 381,441 persons. Married couples numbered 7,420,341, and single persons 25,612,779, of whom 13,010,756 were males and 12,602,023 were females. Of births during the year there were 1,145,374, the boys numbering 586,121 and the girls 559,253, with 91,752 babes still-born. There were 823,718 deaths, 425,059 being of males and 398,659 of females. Divorces show no sign of decrease, there being about the usual average of one divorce to every three marriages, or 109,088 to 325,141. During the year 1889 19,160 Japanese lived abroad. Of persons living between ninety and one hundred years of age there were 7,394; between one hundred and one hundred and seven, 177; the women outnumbering the men in the proportion of 5,264 to 2,307. On Dec. 31, 1889, there were 9,062 foreigners residing in Japan, 1,701 being English, 889 Americans, 550 Germans, 335 French, 108 Swiss, 4,975 Chinese. Of the total, 90 were in the diplomatic service; 185 employed by the Japanese Government; 580 in special occupations, as teachers, missionaries, etc.; and 8,207 in other employments.

Finances.—The approximate budget for the fiscal year 1892-'93, as given by the Government's official organ in Tokio, shows an estimated total expenditure of 91,806,809 yen (as compared with 77,012,252 yen in the previous fiscal year). Of this sum the Crown receives 3,000,000; Foreign Office, 679,910,000; Home Department, 8,952,296; treasury, 2,957,848; army, 13,154,199; navy, 5,568,510; justice, 3,555,145; education, 1,021,413; agriculture and commerce, 1,132,605; communications, 5,104,985; total for ordinary expenditure, 71,372,221, as compared with 67,785,432 in the previous year. In extraordinary expenditure the chief items are: For construction, repairs in the Home Department, 4,470,970 yen; in war, construction of forts, 2,875,000; in navy, 6,645,121 for cruisers and men-of-war, with 1,000,000 for beginning an iron foundry; in education, for new construction, 800,000. Total of extraordinary expenditure, 20,434,588 yen, as compared with 9,226,819 yen of the previous year. These estimates were made before the great earthquakes of Oct. 28, 1891, which required an immediate outlay by the Government of 5,500,000 yen.

According to the official digest of 1890-'91, the total revenue was 78,198,910 yen, raised as follows: From land, 52,530,378; imposts, 1,053,631; saké, 15,184,537; tobacco, 1,825,183; stamps, 615,680; banks and societies, 402,169; internal revenue, 3,539,387; customs, 4,175,542; licenses, 1,776,834; profit on Government enterprises, 8,342,061; miscellaneous, 644,240; interest on funds, 1,108,268. The expenditures for 1890-'91 amounted to 70,515,570 yen of ordinary, and 14,388,081 yen of extraordinary expenses, the total being 84,903,651 yen. The public debt was 255,445,566 yen (less than 6,000,000 yen being to foreigners), or, counting the paper money in circulation, which amounts to 40,065,256, the total indebtedness was 295,510,822, most of it bearing interest at 5 per cent. In 1881 the public money expended in behalf of sufferers by earthquakes, floods, fire, pestilence, etc., amounted to 2,387,957 yen, the appropriations steadily increasing to 18,655,338 in 1888-'89. There are 196 national banks in Japan, one of them having a capital of 17,826,100 yen, another of 10,000,000, another of 4,500,000, and three of over 1,000,000. The capitals, reserves, and dividends of these banks are published semi-annually, from which in the first half of 1891, as compared with the same period in 1890, we find an increase of 2,860,000 yen in capital and a decrease of 265,801 in profits, an increase of 79,420 in dividends, which average 5.752 per 100, a decrease of 186 sen ($\frac{1}{5}$ of a cent). The total coinage of the mint at Osaka for the year ending March 31, 1891, amounted to 48,473,934 pieces of the real or nominal value of 11,001,843 yen; of these, 177,200 pieces, worth 886,000, were gold; 14,952,207 pieces, worth 8,448,616, were silver; and 33,344,527, worth 1,667,227, were nickel. The number of medals struck in 1891 amounted to 19,054 pieces. Since the foundation of the mint, in 1870, the total income has been 20,930,246 yen; expenditure, 11,701,214; net profit, 9,229,031; the amount of bullion imported into the mint being: Gold, 3,635,751 ounces (at 900 standard); silver, 93,923,077 ounces (at 900 and 800 standard); nickel, 12,440,978 ounces; and copper, 327,484,545 ounces; and of coins struck: Gold, 12,637,151, weighing 3,346,368 ounces, worth 62,450,403 yen; silver, 278,448,684, weighing 90,581,384 ounces, worth 104,844,931 yen; nickel, 75,363,738, weighing 11,302,179 ounces, worth 3,768,186 yen; copper, 1,203,922,113, weighing 248,816,420, worth 12,418,057 yen; total, 1,570,371,686 pieces, weighing 390,046,351 ounces, worth 183,481,057 yen.

Army and Navy.—The organization of the Japanese army differs somewhat from that of European forces. A regiment of infantry consists of three battalions of four companies each. On a peace footing a company is made up of 5 officers, 27 non-commissioned officers, and 160 privates—192 men of all ranks. On a war footing 80 privates are added, making a total of 272 men. In peace a regiment of infantry consists in all of 2,347 men and twelve horses, but in war the number of privates is 2,880. In cavalry, the respective figures for peace and war are 159 and 189 men in each company. In artillery a battery will have 148 men and 4 guns in the one case, and 158 men and 6 guns in the other. The field artillery consists of 74-centimetre guns of an Italian model, manufactured at the arsenal at

Osaka. At present only six foreigners are employed in the Japanese military service. The chief arsenal, at Koishikawa, in Tokio, equipped with English machinery, turns out 100 rifles and 30,000 cartridges (or 70,000 if necessary) daily. The Murata rifle, invented by a Japanese colonel, is in use, and the powder, which produces little smoke and makes little noise, is an invention of the Japanese Artillery Committee. By conscription and organization the total effective strength of the Japanese army is 209,326. The actual number of men under arms in the seven military districts, including the ordinary garrison of 9,210, together with the Imperial Guard of 5,591, always in Tokio, is 58,803. Military schools and gendarmes furnish 4,286; reserves and territorial army, 146,212; central staff, 2,014; making in all: staff officers, 450; commissioned officers, 3,360; non-commissioned officers, 10,391; rank and file, 193,804. The proportion of conscripts per 1,000 inhabitants is 16.94. Of the conscripts themselves, only 4.23 have been taken for actual service, while 40.59 of the total number were entirely exempted. The Japanese navy is organized like that of Great Britain, and is officered and manned entirely by natives. In 1889 there were 32 ships of war of 49,616 tons displacement and of 52,481 horse-power, mounting 182 guns, and manned by 5,889 men of all grades. A majority of the war ships and transports have been built in Japan, but the steel vessels of the first class in England. Fifteen torpedo boats and several large steel men-of-war are building in Europe for the Japanese navy, which has now a sea-going squadron of 6 steel and iron ships armed with ordnance of high power. Until 1884 service in the navy was wholly by volunteers; at present the proportion of conscripts to volunteers is 7 to 20. The total *personnel* of the naval establishment is 15,585. The total annual cost of the army and navy is 26.52 per cent. of the national expenditure.

The Imperial Diet.—The Upper and Lower Houses of the Imperial Diet were opened in due form in November, 1890, and held sessions during ninety-nine days, adjourning March 8, 1891. On the 20th of January the edifices, especially built for the purpose and magnificently furnished in modern style, were consumed by fire. The cause alleged was the electric-lighting apparatus, which the Tokio Electric-lighting Company deny. The bills that passed both houses were: Postponement of the execution of the new commercial code, supplementary rules of special export ports, law relating to the appropriations for new war ships, law of weights and measures, revision of term for collection of land tax, and reduction of the budget for the fiscal year 1891. The chief debates and most exciting interest centered upon the proposal of the budget committee of the Diet for a reduction, amounting to 9,000,000 yen of the Government's figures. After a deadlock between Cabinet and Diet, and under an implied threat of dissolution, the Diet yielded, but not until a reduction from 72,000,000 to about 65,000,000 had been acceded to by the Cabinet.

Since the closing of the Diet there has been a steady growth of party organization on lines of opposition to the present Cabinet, with the determination to overthrow it if possible. The

key to the situation is this: Representative government is established in form, but not in fact, nor will it be so long as the Cabinet ministers are responsible only to the Emperor and not to the people. "The Irresponsible Cabinet" is the nickname freely applied to the Government. On the assembling of the Diet for its second session, Nov. 26, 1891, the opposition to the Cabinet at once took pronounced form. The budget committee of the Diet recommended a reduction of the estimates to the amount of 7,942,748 yen. With a large standing army, and expenses of army and navy put in the "fixed expenditures" impregnable to popular criticism, "government by party," for which the majority of the representatives agitate, is not possible. The crisis was precipitated March 25, when, after a prolonged series of votes and resolutions carried against the Government, the Cabinet ministers met at the official residence of the Minister President and unanimously voted to dissolve the Lower and prorogue the Upper House. The Imperial Rescript was issued the same evening. No date is yet (Jan. 30) fixed for the new elections.

Earthquake.—Besides inundations causing great loss, the most destructive earthquake known to Japan since 1854 took place in central Japan at 6:30 A. M., Oct. 28. In a few minutes 8,000 people were killed or buried under the ruins of their houses, which quickly caught fire. Over 10,000 persons were reported wounded, many of them fatally, 90,000 houses were destroyed, whole villages and towns ruined, river banks broken, bridges twisted like writhing serpents, railways spoiled for miles, and public works destroyed. Rice fields rose and fell like waves of the ocean, houses were in some instances turned upside down, and groves of trees moved several rods. About 40,000 square miles were visited with instant and appalling severity, the greatest disasters being limited to the rich valleys of Aichi and Gifu, noted centers of porcelain manufacture. The earthquake storm lasted many days, so that at times it was impossible to walk or stand. In one day 700 minor shocks were counted, and in one month 1,700. Private aid, though liberal, being unequal to the emergency, the Government, without waiting for the Diet, appropriated 2,500,000 yen to the relief of the sufferers, and since the dissolution of the Diet has devoted nearly 4,000,000 yen to repair the public works and restore the industries of the desolated region.

Minor Events.—Among the deaths of the year are those of Prince Sanjo San'yoshi, a leader of the revolution of 1868 and a noble of the highest rank, Feb. 22; and the Hon. John F. Swift, the American minister plenipotentiary, March 10; Yoshida Kiyonari, Vice-Minister of Foreign Affairs and formerly the Japanese minister at Washington; and Nakamura Masanawo, Senator, educator, author, and translator of the Constitution of the United States. At Otsu, near Kioto, the Russian Crown Prince was suddenly attacked by an assassin, Tsuda Sanzo, a bigoted member of the police force, who feared Russian designs against Japan. The quick movement of two *jin-riki-sha* men defeated the attempt, and barely saved the Prince's life, the assassin's sword gashing his head in an ugly manner. An almost incredible political excitement followed. Theatres

were closed, and 10,000 telegrams of condolence were received by the Prince. The assassin died in prison, and no interruption of the friendly relations of Japan and Russia has followed.

Trade and Industry.—The tables of exports and imports show that the resources of the country are being steadily developed, and the imports are increasing over exports. In 1880 the exports were 29,373,400 yen, and the imports 41,101,937, showing an excess of imports over exports of 11,728,537. In 1889 the exports amounted to 70,060,706, imports 66,103,767. The half-yearly statistics from Jan. 1 to July 1, 1891, show that the exports have exceeded the imports by 7,500,000. There are now in Japan 36 mills for spinning cotton yarn, with 377,970 spindles, employing 17,248 persons. An attempt made by a foreigner to obtain a patent under Japanese laws was met by the decision that the granting of a patent is an executive act within the power of a minister of the department, and that he can not be forced to grant one to a foreigner. An appeal having been lodged, decision was again given against the foreign firm.

Morals, Education, and Religion.—The large Greek Church cathedral on Suruga Dai, Tokio, with buildings occupied by the Russian missionaries, whose work in Japan has resulted in 18,000 conversions, was dedicated with great ceremony. The old standards of public morality, excellent under feudalism, being somewhat altered under the new Western ideas of individuality and responsibility upon which Western laws, government, and progress are established, the Emperor, for the first time in the history of Japan, issued, in December, 1890, a rescript of twenty lines inculcating moral duties. The influence of this act has been very wide. Loyalty to the Emperor and obedience to parents is made the supreme duty. It was hung up in the schools with the Emperor's photograph, and teachers and students made obeisance to it, the Christians in some instances refusing to bow, and in others explaining that it was deference to a ruler but not worship of a god, as the Mikado still is in the eye of Japanese law. The total number of the school population of Japan is 6,920,345, but of these only 3,277,489, or less than half, are in school. There has been a reaction against female education, two thirds of the absentees from schools or non-attendants being girls. There are 530 middle schools for males and 1 for females. The number of female students in the special schools is 2,599. The Government is hostile to private schools, as tending to breed the *soshi* or turbulent and lawless young men who figure so prominently in contemporary politics, and even draw forth the special executive action of the Central Government. Only 21 students were sent abroad in 1890. Besides the agitation on treaty revision, economy, and education, the Minister of Home Affairs promulgated his "Instruction to Buddhist Priests," rebuking them for their "disgraceful struggle for worldly honors and profits." There are in Japan, of Shintoists, 8 heads of sects, 63,519 priests or preachers, and 965 students of the *cultus*; of Buddhists, 37 heads of sects, 52,293 priest-preachers, 39,673 simple priests, and 13,642 students of the *cultus*. The Buddhists sustain about a dozen journals and 300 minor

periodicals. Of temples, there are, 193,031 Shinto and 71,973 Buddhist. About 600 Christian missionaries of all forms of the faith labor in Japan, and the nominal Christian population is estimated at 250,000. There are 92 Christian churches and chapels in Tokio. The tendency of Japanese Christianity is less in the direction of doctrinal reception or development, and more directly toward reformation of morals, abolition of licensed prostitution, temperance, Sabbath keeping, purification of the home, moral elevation of family life, abolition of concubinage and polygamy, and lessening of divorce.

JEWS. The situation in Russia has been the question of the year. The persecutions endured by its Jewish inhabitants have continued with no prospect of cessation, despite the general expressions of disapproval from nearly every country on the globe—from Legislature, Senate, public gatherings, political organizations, the press, pulpit, and platform. All the recognized agencies of civilized intercourse seem powerless to restrain the severity of anti-Jewish enactments. The figure of Baron de Hirsch rises above the shadows of the time as the personification of philanthropy, and his magnificent provisions for the suffering Jews, which have spurred on active agencies in Europe and America in their behalf, form a bright chapter in the history of the year. The interest that Baron de Hirsch evinced in the welfare of his brethren, which was illustrated in his gift of three millions for the agricultural and technical training of Jewish youths in Austrian Galicia, culminated in his deed of trust, whose preamble was written Jan. 22, 1891, whereby the capital of \$2,400,000 was remitted to the Baron de Hirsch fund of New York for aiding exiles from Russia and Roumania. For some months previously about \$10,000 monthly had been sent for that purpose, and expended in educational work, transportation, the purchase of tools, and temporary relief. With the capital on hand and property invested, early in March, the Hirsch fund was enabled to continue and develop its lines of activity. According to the deed of trust, the corporation is to embrace among its objects the following:

1. Loans to emigrants from Russia or Roumania, actual agriculturists, settlers within the United States, upon real or chattel security.
2. Provision for the transportation of emigrants, selected (after their arrival at an American port) with reference to their age, character, and capacity to places where it is expected the conditions of the labor market or the residence of friends will tend to make them self-supporting.
3. Provision for training emigrants in a handicraft, and contributing to their support while learning such handicraft, and for furnishing the necessary tools and implements and other assistance to enable them to earn a livelihood.
4. Provision for improved mechanical training for adults and youths, emigrants and their children, whereby persons of industry and capacity may acquire some remunerative employment, either by the payment of apprenticeship or tuition fees, or the instruction of adults and minors in trade schools or otherwise, with contributions for temporary support.
5. Provision for instruction in the English language and in the duties and obligations of life and citizenship in the United States and for technical and trade education and the establishment and subvention of special schools, workshops, and other suitable agencies for promoting and maintaining such instruction.

6. Provision for instruction in agricultural work and improved methods of farming, and for aiding settlers with tools, and implements and the practical supervision of such instruction, conducted upon suitable tracts of land and in necessary buildings.

7. Co-operation with established agencies in various sections of the United States, whose duty it shall be in whole or in part to furnish aid or relief and education to needy and deserving applicants coming within the classes designated herein.

8. Contributions toward the maintenance of individuals and families, selected by such corporation or corporations, while temporarily awaiting work or when settled in the new homes in which they may be established.

9. Such other and further modes of relief and such other and further contributions to education and in such departments of knowledge as the said trustees or their successors or said corporations shall from time to time decide.

In conformity with the provision of the deed, which authorizes the capital of \$2,400,000 to be expended for "acquiring and improving land, allotting farm holdings, erecting and maintaining dwellings for the occupancy of families of Hebrew emigrants from Russia and Roumania, erecting and maintaining schools and other necessary buildings for the promotion of education and for manual and agricultural training," a large number of farmers have been aided in New England, Kansas, New Jersey, and elsewhere with loans bearing interest at 5 per cent. Dairy and truck farms have proved most successful, while small fruit and berries have been cultivated profitably. An agricultural settlement has been formed at Woodbine, N. J., near extensive factories not far from Cape May and Philadelphia. Similar colonies are projected in Pennsylvania, Minnesota, Texas, and New Mexico. In addition, classes are conducted in manual training in connection with the Hebrew Technical Institute of New York, and a school for young and old immigrants established, preparing them for the public schools, while transportation is furnished to emigrants who leave the crowded seaboard cities for the interior.

Almost simultaneously with the help given for American colonization, Baron de Hirsch launched his plan for carrying out the emigration of Jews from Russia. On Sept. 10, the Jewish Colonization Association was formed in London. The trust fund of £2,000,000 is divided into 20,000 shares of £100 each, of which Baron de Hirsch has taken 19,990. Among the objects for which the company is established are:

To assist and promote the emigration of Jews from any parts of Europe or Asia, and principally from countries in which they may for the time being be subjected to any special taxes or political or other disabilities, to any other parts of the world, and to form and establish colonies in various parts of North and South America and other countries for agricultural, commercial, and other purposes.

To purchase and acquire any territories, lands, or other property, or interests in or rights over territories, lands, or other property, in any parts of the world.

To establish commercial, agricultural, and other settlements in any territories or lands so acquired, except Europe, and to develop them by clearing, draining, fencing, etc.

To construct and maintain roads, tramways, railways, bridges, harbors, reservoirs, water courses, wharves, embankments, fortifications, telegraphs,

telephones, mills, factories, stores, synagogues, and places of recreation.

To establish emigration agencies in Europe, Asia, and other parts of the world, and to construct, hire, and equip vessels for the transport of the colonists.

To make or procure grants of land, concessions of mining and other rights, or other privileges to the colonists.

In close relation to Baron de Hirsch's plans was the visit of Arnold White to Russia during the year, whose report confirmed the published statements as to the wretched condition of the Jews. In particular he referred to the strong physique of the Jews engaged in agriculture, while he deplored the weak constitutions of town residents, due to the overcrowding, hard labor, and excessive poverty. He wrote also that the lamentable condition of the children, if known to the Czar, would bring about a softening of the laws against the Jews. Later in the year Harold Frederic spent several months in Russia, and his indictments of the Russian Government appeared in the "New York Times." Meanwhile the active work of distributing the Russian exiles has begun, and agencies are established in the chief European seaports. The appeal of the English committee resulted in the receipt of \$80,000 to Jan. 1, 1892, many Christians being among the donors. The first colony of 156 immigrants has been sent to the Argentine Republic, where Baron de Hirsch has bought 700,000 acres, while Dr. Friedman has undertaken an expedition to Midian to examine its fitness for the exiles. Turkey, while friendly, will not permit any emigration *en masse* in Palestine. The highest circles in Berlin, Vienna, and Amsterdam unite in raising funds for the refugees, to transport them to more hospitable climes.

Among events of special interest was the appointment of Luigi Luzzatti as minister of the Italian treasury; the election of John Philippon as member of the Swedish Upper House of Parliament; the appointment of Signor Malvano as Secretary-general of the Italian Ministry of Foreign Affairs; the election of A. F. K. Hartogh and J. A. Levy as members of the Dutch Parliament; the appointment of Ney Elias as British consul-general in Persia; the election to the Austrian Reichsrath of Freiherr von Oppenheim and Leopold Polak. In Australia, Hon. Julien E. Salomons was knighted and appointed member of Privy Council of South Australia; J. Sternberg elected member of Legislative Council of Victoria; and S. S. Myers, Mayor of North Dunedin, New Zealand. In England, Sidney Stern was elected member of Parliament for Stowmarket, and H. S. Leon for Northern Bucks, while Gustavus Nathan was knighted. On June 23 Rev. Dr. H. Adler was installed chief rabbi of the Jews of Great Britain, and on March 26 M. Dreyfous was elected chief rabbi of Paris. The centenary of Jewish emancipation in France was celebrated on Sept. 27. Cardinal Manning was presented with an address from the Jews of England on the occasion of the jubilee of his ordination.

The record for the year in the United States is largely a chronicle of events connected with the Russian refugees, who have arrived at the rate of 8,000 a month. To develop the work of

reception, transportation, and distribution, a special organization was formed, and agencies established in many cities in the interior. The sympathy of all is assured, with the exception of the labor unions, whose opposition is bitter. On the general appeal of the New York committee, issued in October, about \$90,000 was received, several Christians contributing. The report of the New York United Hebrew Charities contains interesting figures on the subject of the immigrants. Records at the Barge Office show that, for the year ending Sept. 30, 1891, 62,574 Jewish immigrants landed in this city, of whom nearly 40,000 came after June. Their nationalities were as follow: Austrians, 6,450; Danes, 29; Dutch, 9; English, 98; French, 19; Germans, 864; Roumanians, 874; Russians, 54,194; Swedes, 24; Turks, 13—26,891 men, 16,393 women, 19,290 children; 195 were returned to Europe by the Government. Total, 62,574. There remained in the city 46,029; the rest left for other cities, but returned. About 70 families are provided weekly with work at distant mills; in a few weeks, 161 families, representing 892 persons, were found mill and factory work in 19 States, applications coming in from all quarters for desirable help. Owing to the outlay thus entailed, the expenses of the charities have increased to \$150,000 yearly, the Hirsch fund contributing to the transportation account. During the year ending Nov. 1 8,045 new applications were passed upon, and 3,581 that had been previously examined and were reinvestigated; 1,043 persons were aided with transient relief, 4,553 with transportation, 5,194 with employment, making a total of 39,916 persons.

Despite the strain caused by the increased immigration, the Jews of the United States show continued activity in benevolent and educational work, in what may be termed home missions. Philadelphia has erected a new edifice for the Hebrew Education Society; New York, a Hebrew Educational Institute in the heart of the overcrowded down-town district; Chicago, a manual training school for children of the refugees. New temples have been built or are in process of erection in New York, Philadelphia, Brooklyn, Baltimore, Salt Lake City, and elsewhere.

The Jewish question has been a prolific subject of discussion abroad and at home. The English reviews have contained steady references, while Baron de Hirsch and Goldwin Smith's articles in the "North American" and Baron de Hirsch's and M. Leroy Beaulieu's in "The Forum" have been of special interest. The latter author had a brilliant series of papers on the Jews and anti-Semitism in the "Revue des Deux Mondes" of Feb. 15, May 1, and July 15.

S. Schechter was appointed Reader of Talmudic Literature in Cambridge University; Dr. G. Deutsch, professor in the Cincinnati Hebrew Union College; Dr. Morris Loeb, Professor of Chemistry in the University of the City of New York; Dr. H. M. Leipziger, an assistant superintendent of the New York city public schools. S. W. Rosendale was elected Attorney-General of New York. Thanksgiving was marked by union services of synagogue and church in several cities. Among the first donations to relieve the Russian famine was \$1,400 from the synagogue in Sacramento. The condition of the over-

crowded Jewish district, due to the increased immigration, in the lower part of New York city, gave rise to much discussion. In an interview with a representative of the "Jewish Messenger," under date of Sept. 11, the New York Board of Health made various suggestions, urging better quarters up town and distribution in the rural district. The departure of Jesse Seligman for Europe was made the occasion of a public banquet in his honor on Oct. 1, at which \$30,000 was subscribed for the Russian refugees. The Emigration Commissioners sent to Europe by the United States have returned.

JOHNSTON, JOSEPH EGGLESTON, an American soldier, born at Longwood, near Farmville, Va., Feb. 3, 1809; died in Washington, D. C., March 21, 1891. His grandfather, Peter Johnston, a Scotchman, settled on James river



JOSEPH EGGLESTON JOHNSTON.

in 1727, and afterward gave to Hampden Sidney College the land on which its buildings were erected. Joseph's father (also named Peter) served with credit in the Revolutionary War, became a lawyer, and in 1809 was made a judge. He was a member of the General Assembly of Virginia, and in 1798-'99 was its Speaker. His wife was Mary Wood, a niece of Patrick Henry. Joseph was graduated at the Military Academy, West Point, in 1829, ranking thirteenth in a class of 46. Among his classmates were Gens. Robert E. Lee, of the Confederate, and Ormsby M. Mitchell, of the National service. Immediately after graduation he was commissioned a second lieutenant in the Fourth Artillery, and assigned to garrison duty at Fort Columbus, N. Y. He was stationed at Fort Monroe, Va., in 1830-'31, took part in the Black Hawk expedition in 1832, was in garrison at Charleston, S. C., in 1832-'33, at Fort Monroe again in 1833-'34, at Fort Madison, N. C., in 1834, and performed topographical duty in 1834-'35. He was promoted to first lieutenant in July, 1836, and was an aide to Gen. Winfield Scott in the Seminole War, but resigned on May 31, 1837, and became a civil engineer. On July 7, 1838, he was appointed first lieutenant of topographical engineers, and brevetted captain for gallantry in the war in Florida. A story is told of his service in that campaign to the effect that he was with a reconnoitering party that fell into an ambuscade, and nearly all the officers were killed or wounded; whereupon he took command, conducted an orderly retreat of 7 miles, repelled the enemy, and carried off the wounded. He was struck by a ball in the forehead, and 30 bullets passed through his clothing.

He had charge of the improvement of Black river, N. Y., in 1838-'39, of the Sault Ste. Marie in 1840, of the boundary survey between the United States and Texas in 1841, of the harbors on Lake Erie the same year, and of the Topographical Bureau at Washington in 1842. He served again in Florida in 1842-'43, and the next year assisted in surveying the boundary line between the United States and the British provinces. He was engaged in the coast survey in 1844-'46, and in the latter year was promoted to captain in the engineer corps.

During the Mexican War he served with the army of Gen. Scott, being in action at Vera Cruz, Cerro Gordo, Contreras, Churubusco, Molino del Rey, Chapultepec, and the City of Mexico. He was wounded at Cerro Gordo, and again at Chapultepec, where he was the first to plant a regimental color on the citadel. For his gallant services in these actions he was brevetted colonel, April 12, 1847. He was mustered out as lieutenant-colonel of volunteers Aug. 28, 1848, but was reinstated by act of Congress as captain of engineers. He was chief of topographical engineers in the Department of Texas in 1848-'53, and was in charge of the Western river improvements in 1853-'55. From that date till 1860 he was a part of the time on garrison duty, part in active service in Kansas (during the struggle there between Free-State men and Slave-State men), part on special duty at Washington, and part with the Utah expedition as acting inspector-general. He was made lieutenant-colonel of the First Cavalry in March, 1855, and on June 28, 1860, was promoted to brigadier-general and made quartermaster-general of the army, with headquarters at Washington. On April 22, 1861, he resigned this commission and returned to Virginia. He was the highest in rank in the United States army of all the officers who left it to take service in the Confederacy.

He was immediately commissioned major-general of Virginia volunteers, and engaged in organizing the troops that were pouring into Richmond. Two weeks later he was called to Montgomery, Ala., and made a brigadier-general in the army of the Confederate States, and assigned to the command of Harper's Ferry. Here he had about 7,000 men. But he protested against the policy of keeping a force at Harper's Ferry, a place that has no strategic importance, and in June he was authorized to abandon it and move toward Winchester. On the 16th of May the Confederate Congress had passed a bill creating the rank of full general and providing for five appointees. An earlier act of that Congress had provided that "in all cases of officers who have resigned, or who may within six months tender their resignations, from the army of the United States, and who have been or may be appointed to original vacancies in the army of the Confederate States, the commissions issued shall bear one and the same date, so that the relative rank of officers of each grade shall be determined by their former commissions in the United States army." In August, when Mr. Davis made the appointments under this law, instead of giving the first rank to Gen. Joseph E. Johnston (who had been a brigadier-general in the United States army), he gave it to Samuel Cooper (who had been a col-

onel), the second to Albert Sidney Johnston (who had been a colonel), the third to Robert E. Lee (who had been a lieutenant-colonel), the fourth to Joseph E. Johnston, and the fifth to G. T. Beauregard (who had been a captain). J. E. Johnston's commission was made to date from July 4. Gen. Johnston says in his "Narrative": "Information of these nominations and their confirmation came to me at the same time. On receiving it, I wrote to the President [Jefferson Davis] such a statement as the preceding, and also expressed my sense of the wrong done me. But, in order that sense of injury might not betray me into the use of language improper from an officer to the President, I laid aside the letter for two days, and then examined it dispassionately, I believe, and was confident that what it contained was not improper to be said by a soldier to the President, nor improperly said. The letter was therefore dispatched. It is said that it irritated him greatly, and that his irritation was freely expressed. The animosity against me that he is known to have entertained ever since was attributed by my acquaintances in public life in Richmond to this letter."

Gen. Johnston's force in the Shenandoah valley was opposed by a National force under Gen. Robert Patterson, and when in July Gen. McDowell was sent forward with an army to attack the Confederate army commanded by Gen. Beauregard at Manassas, Patterson was relied upon to prevent Johnston from going to the help of Beauregard. But Johnston, masking his movement by means of cavalry, went with a large part of his force by rail to the help of Beauregard, and arrived with part of his men while the battle of Bull Run (July 21, 1861) was in progress. He left Beauregard in command of the troops engaged, while he assumed command of the whole field and hurried forward the reinforcements. These came just in time to turn the scale of the contest. The National army, after an obstinate battle, was defeated, a large part of it becoming demoralized, and streamed back in confusion toward Washington. Gen. Johnston says: "If the tactics of the Federals had been equal to their strategy we should have been beaten. If, instead of being brought into action in detail, their troops had been formed in two lines with a proper reserve, and had assailed Bee and Jackson in that order, the two Southern brigades must have been swept from the field in a few minutes, or enveloped. Gen. McDowell would have made such a formation, probably, had he not greatly underestimated the strength of his enemy." Gen. Johnston was severely criticised at the South for not closely following the defeated army, and capturing the city of Washington. On this point he says:

If the tone of the press indicated public opinion and feeling in the South, my failure to capture Washington received strong and general condemnation. Many erroneously attributed it to the President's prohibition [Mr. Davis reached the field near the close of the battle]; but he gave no orders, and expressed neither wish nor opinion on the subject, that ever came to my knowledge. Considering the relative strength of the belligerents on the field, the Southern people could not reasonably have expected greater results from their victory than those accomplished: the defeat of the invasion of Virginia, and the preservation of the capital of the Confederacy. All the military condi-

tions, we knew, forbade an attempt on Washington. The Confederate army was more disorganized by victory than that of the United States by defeat. The Southern volunteers believed that the objects of the war had been accomplished by their victory, and that they had achieved all that their country required of them. Many, therefore, in ignorance of their military obligations, left the army—not to return. Some hastened home to exhibit the trophies picked up on the field; others left their regiments without ceremony to attend to wounded friends, frequently accompanying them to hospitals in distant towns. Such were the reports of general and staff officers and railroad officials. Exaggerated ideas of the victory, prevailing among our troops, cost us more men than the Federal army lost by defeat.

Gen. Johnston's difficulties with the Confederate Administration began early, and were quite serious. On the 1st of March, 1862, he was obliged to write directly to President Davis and remonstrate against the conduct of the Secretary of War, Hon. Judah P. Benjamin, who was granting leaves of absence and furloughs without consulting the commanding officers, and to such an extent as to impair the discipline of the army. In March he fell back with his forces to the line of the Rappahannock, in order to be nearer Richmond and better able to defend it, whatever route the National army under Gen. McClellan might choose in moving against that city. When that army was removed by water to Fort Monroe and chose the approach up the peninsula, Gen. Johnston, in a council of war with Mr. Davis, Gen. Lee, and other commanders, proposed that all the available Confederate forces in Georgia and the Carolinas and those at Norfolk, Va., be united with those on the peninsula and those on the Rappahannock, to make as large an army as possible to meet the invasion, and that this army be held near Richmond to await the advance of the enemy, instead of opposing his progress up the peninsula. Johnston says:

In the discussion that followed, Gen. Randolph, who had been a naval officer, objected to the plan proposed, because it included at least the temporary abandonment of Norfolk, which would involve the probable loss of the materials for many vessels-of-war contained in the navy-yard there. Gen. Lee opposed it, because he thought that the withdrawal from South Carolina and Georgia of any considerable number of troops would expose the important seaports of Charleston and Savannah to the danger of capture. He thought, too, that the peninsula had excellent fields of battle for a small army contending with a great one, and that we should for that reason make the contest with McClellan's army there. Gen. Longstreet took little part, which I attributed to his deafness. I maintained that all to be accomplished, by any success attainable on the peninsula, would be to delay the enemy two or three weeks in his march to Richmond, for the reasons already given; and that success would soon give us back everything temporarily abandoned to achieve it, and would be decisive of the war, as well as of the campaign. The President announced his decision in favor of Gen. Lee's opinion, and directed that Smith's and Longstreet's divisions should join the Army of the Peninsula, and ordered me to go there and take command, the Departments of Norfolk and the Peninsula being added to that of Northern Virginia.

Gen. Johnston assumed his new command on April 17, having about 53,000 men, and proceeded to strengthen the defensive works across the peninsula at Yorktown. McClellan constructed

elaborate works for the reduction of these, and when he was nearly ready to open his batteries Johnston fell back, May 3-4, to Williamsburg. In the afternoon of the 4th the rear guard of the Confederate army and the advance guard of the National came into collision; both sides were re-enforced, and the skirmish was developed into a battle on the 5th, which resulted in the withdrawal of the Confederates after heavy fighting, leaving 400 of their wounded in Williamsburg, and taking with them about that number of prisoners. The National loss was about 2,200, the Confederate about 1,800. McClellan moved slowly up the peninsula, establishing a base of supplies at White House, on the Pamunkey, and thence westward toward Richmond. The chief natural obstacle in his path was the Chickahominy river with its connecting swamps; and this runs in such a direction that he could not place his whole army on the south or right bank of it without imperiling his communications with his base. He threw his left wing across that stream, and with his right fought at Mechanicsville and Hanover Junction, in order to make the way clear for a re-enforcement of 40,000 men under Gen. McDowell to join him. But McDowell was called away to meet a Confederate force that was moving down the Shenandoah valley, and Johnston seized this opportunity to attack the isolated left wing, which was within six miles of the Confederate capital. He was favored by a heavy rain, which in the night of May 30 swelled the river and swept away some of the bridges. He supposed that all were impassable; but one remained, and the veteran Gen. Sumner, anticipating the battle, had his corps drawn up ready to cross as soon as he should receive the command to do so. Johnston attacked on the 31st, and his men almost surprised the enemy in their half-finished intrenchments; but they lost heavily before the works, and succeeded in carrying them only when a large detachment made a *détour* and took them in flank. Johnston's plan of battle depended mainly upon thrusting in a force between McClellan's detached left wing and the river: to strike that wing on its right flank, double it up, and at the same time cut it off from all connection with the main army. He began this movement, but it was frustrated by Sumner, whose corps crossed the river promptly on a single frail bridge, met the Confederate flanking force, and after hard fighting drove it off and cleared the ground. At the close of this battle—which bears the double name of Fair Oaks and Seven Pines, and which resulted in a National loss of over 5,000 men and a Confederate loss of nearly 7,000—Gen. Johnston received two wounds, a musket shot in the shoulder and a blow in the breast from a fragment of shell. He was carried from the field in an ambulance, and was not able to return to duty till autumn. Two days later the command of the forces about Richmond was given to Gen. Robert E. Lee; and Johnston, in his "Narrative," takes pains to point out the fact that as soon as he lost command of the Army of Virginia his suggestion was adopted, and the concentration of forces which had been denied to him was given to his successor. He criticises his own action at Seven Pines, saying that he brought on the battle too soon by one day; for twenty-four hours later

the river would have been higher and he would have received a re-enforcement of 8,000 men, who without his knowledge were on their way to him from the south.

On the 12th of November Gen. Johnston reported for duty at the War Office in Richmond, and on the 24th he was assigned to a command in the Mississippi valley, including the forces under Gens. Bragg, Pemberton, and Kirby Smith. Here he repeated his advice to concentrate forces, and form a large army in order to attack the army under Gen. Grant; but again his advice was unheeded. He proposed that the force near Little Rock, Ark., commanded by Gen. Holmes, which was not confronted by an enemy, should be brought across the Mississippi and united with that under Gen. Pemberton, while Bragg's should be held within co-operating distance, and that Grant should be vigorously attacked. "As our troops are now distributed," he added, "Vicksburg is in danger." During the winter and spring there were various movements in Gen. Johnston's department, with none of which was he intimately connected, because of the scattered condition of his forces. The principal events were the battle of Murfreesborough or Stone river (Dec. 31 and Jan. 2), fought by Gen. Bragg against Gen. Rosecrans, which is generally considered a drawn battle, though Rosecrans was left in possession of the field; the movements of Grant toward Vicksburg; the ascent of the Mississippi by National war vessels, which ran past the Confederate batteries, and the descent of ironclad gunboats. When Grant had crossed to the west side of the Mississippi, marched south as far as Bruinsburg, and recrossed to the east side in order to attack Vicksburg in the rear, Gen. Johnston (then in Tennessee) received orders from Richmond, May 9, to go at once to Mississippi and take chief command there. He says: "I had been prevented, by the orders of the Administration, from giving my personal attention to military affairs in Mississippi at any time since the 23d of January." He set out at once, and arrived at Jackson in the evening of the 13th, finding there about 12,000 men subject to his orders. He telegraphed to his Government that he was too late, but would do what he could. Grant's army, which had brushed away a small Confederate force at Raymond, advanced promptly on Jackson, reaching that place on the 14th, and attacking Johnston's. The latter, with a loss of about 800 men, mostly prisoners, evacuated the city, after burning most of his supplies. Grant destroyed the factories and a portion of the railroad, and then turned westward, fought Pemberton at Champion Hills and at the Big Black river, and drove him within the defenses of Vicksburg. Johnston had sent orders to Pemberton to abandon the defense of Vicksburg, and save his army, but Pemberton replied, May 18: "On the receipt of your communication, I immediately assembled a council of war. . . . The opinion was unanimously expressed that it was impossible to withdraw the army from this position with such *morale* and material as to be of further use to the Confederacy. . . . I have decided to hold Vicksburg as long as possible, with the firm hope that the Government may yet be able to assist me in keeping this obstruction to the enemy's free navigation of the Mississippi river.

I still conceive it to be the most important point in the Confederacy." Gen. Johnston wrote in reply: "I am trying to gather a force which may relieve you. Hold out." By the 3d of June he had received re-enforcements to the extent of, perhaps, 15,000 men, but he made no direct movement to relieve Vicksburg, for which he gives these reasons:

My forces, not equal to a third of the Federal army, were almost without artillery and field transportation, and deficient in ammunition for all arms; and could not, therefore, have been moved, with any hope of success, against that powerful army, already protected by lines of counter and circumvallation. All the supplies that had been collected in the department were, of course, with the troops in Vicksburg and Port Hudson. The troops coming from the east, by railroad, had brought neither artillery nor wagons. Frequent drafts upon the country had so much reduced the number of horses and mules that it was not until near the end of June that artillery and wagons, and draught-animals enough for them, could be procured, generally from long distances—most of the artillery and wagons from Georgia. Some twelve pieces, found without carriages, were mounted on such as could be made in Canton. There was no want of provision and forage in the department, but they were still to be collected; and we had small means of collecting them, and none of transporting them with a moving army.

Many telegrams passed between him and the War Department, he being urged to attack Grant's army at all hazards, not to let Vicksburg be lost without a struggle; replying that he could not attack with any prospect of success unless he first received large re-enforcements, and being told that it was impossible to give them to him. At length, about the 1st of July, he put his forces in motion toward the besieged city, but it fell on the 4th, and Pemberton's entire army became prisoners. A few days later Port Hudson also fell, and the Mississippi was then completely open to the National forces. Johnston then fell back to Jackson. A large force, under Gen. Sherman, advanced against him there, and in the night of the 16th he abandoned the place, moving eastward. On the 22d, at his own request, he was relieved from further command of the Department of Tennessee. In reply to the criticisms of Mr. Davis and Gen. Pemberton, which threw upon him the blame for the loss of Vicksburg, Gen. Johnston sums up a long argument:

Without reference to the military value of the place, the army should not have been exposed to investment in it; for the capture of the place was the certain result of a siege. After investment, surrender was a mere question of time; there could be no reasonable hope of relief. As the Confederate Government had been unable to prevent a siege, it was certain that it could not break one. As the capture of the place could not be prevented, the army should have been saved by leading it away. If I and the re-enforcements sent from Beauregard's department had been ordered to Mississippi in April, in time to join Gen. Pemberton's army, I could have directed the Confederate forces, and would have been responsible for events; but, by hesitating to transfer troops and send a new commander until too late, the Administration made itself and Gen. Pemberton responsible for consequences, and those consequences were the ruin of our affairs in Tennessee as well as in Mississippi.

Ten days after the fall of Vicksburg, Mr. Davis wrote a long letter to Gen. Johnston, in which he accused him of insubordination and mismanagement, to which the general replied at equal

length and with equal plainness. The correspondence was called for by the Confederate Congress, and Mr. Davis submitted his own letter, but took advantage of a misstatement of the dates to withhold Johnston's reply. Both letters are given in full in the general's "Narrative."

On Dec. 18, 1863, Gen. Johnston was transferred to the command of the Army of Tennessee—which, under the leadership of Gen. Bragg, had fought the bloody but fruitless battle of Chickamauga, and been defeated in that of Missionary Ridge—and established his headquarters at Dalton, Ga. He spent the winter in reorganizing his forces, constructing defensive works, and preparing for the spring campaign, which, it was generally believed, would decide the contest.

In May, 1864, he had about 55,000 men (if counted in the same way that the opposing force was counted) to which Polk's corps was added a few days later, when Gen. William T. Sherman, with an army of 98,000, moved against him. Sherman moved by his right flank, turning the position at Dalton, and sent McPherson's corps to march through the gap at Resaca, and cut the railroad over which Johnston drew his supplies. McPherson found fortifications at Resaca, feared to attack them, fell back to the gap in the mountains, and thus lost a golden opportunity, for before the rest of Sherman's army arrived, Johnston fell back to Resaca with his entire force. By some fighting and much manœuvring Sherman gained, with his right, an elevated position, from which his guns could destroy the railway bridge over the Oostenaula river, and at the same time threw two pontoon bridges across it three miles below the town. This made it necessary for Johnston to fall back again to save his communications, and in the night of May 15 he retreated, burning the bridges behind him. Sherman followed promptly, and on the 19th found him in position at Cassville, whence, after sharp skirmishing, he retreated again in the night of the 20th and crossed the Etowah to Allatoona. Johnston says he intended to fight a battle at Cassville, but Hood and Polk—two of his corps commanders—told him their positions were enfiladed by Sherman's artillery. That general avoided the strong position of Allatoona pass, and moved westward to draw Johnston out of it. In this he was successful, and the armies met at New Hope church, where there was irregular fighting for six days but no general engagement. During this time Sherman strengthened his right, and then extended his left, and secured the roads to Allatoona; after which he sent a force to occupy the pass and repair the railroad. Johnston then retreated again, and took up a position on the mountain slopes crossing the railroad above Marietta. Sherman followed him closely, and established an intrenched line parallel with his. Here, though no battle was fought, the firing from the rifle pits was incessant, and there was much loss of life. Johnston, finding that he could not hold a line 10 miles long, shortened it until he occupied only the slope of Kenesaw mountain. Sherman made corresponding contractions, kept the lines close, constructed elaborate works, and never intermitted the fire of artillery and musketry. He gained and held some good positions on the 21st, and pushed forward two corps to within three

miles of Marietta, where Hood's corps attacked them and was repelled with a loss of about 1,000 men. On the 27th Sherman made a heavy assault on Johnston's center, which failed with a loss of over 2,500 men, while the Confederate loss was but little over 800. Sherman, boldly letting go his communications for a time, now took ten days' provisions in wagons, and moved southward with his whole army, thus compelling his opponent either to come out of the intrenchments and fight him or to retreat again. Johnston fell back to the Chattahoochee, where he had elaborate fortifications on the north side of the stream, already prepared by the labor of a thousand slaves at work for a month. Sherman moved up promptly, and on July 9 threw a large part of his army across the stream, at a point above the Confederate position. This river was the last great natural obstruction in Sherman's path to Atlanta, and Johnston was now compelled to surrender it and fall back again. Sherman followed cautiously, and on the 17th made a grand right wheel toward Atlanta. But on that day came orders from Richmond removing Gen. Johnston from command, and making Gen. Hood his successor. Gen. Johnston thus explains his conduct of this campaign:

Gen. Sherman's troops, with whom we were contending, had received a longer training in war than any of those with whom I had served in former times. It was not to be supposed that such troops, under a sagacious and resolute leader, and covered by intrenchments, were to be beaten by greatly inferior numbers. I therefore thought it our policy to stand on the defensive, to spare the blood of our soldiers by fighting under cover habitually, and to attack only when bad position or division of the enemy's forces might give us advantages counter-balancing that of superior numbers. So we held every position occupied, until our communications were strongly threatened; then fell back only far enough to secure them, watching for opportunities to attack, keeping near enough to the Federal army to assure the Confederate Administration that Sherman could not send reinforcements to Grant, and hoping to reduce the odds against us by partial engagements.

The reasons for his removal, as given in the telegram announcing it, were that he had "failed to arrest the advance of the enemy to the vicinity of Atlanta, far in the interior of Georgia, and expressed no confidence that he could defeat or repel him." In answer, Gen. Johnston wrote: "As to the alleged cause of my removal, I assert that Sherman's army is much stronger compared with that of Tennessee than Grant's compared with that of Northern Virginia. Yet the enemy has been compelled to advance much more slowly to the vicinity of Atlanta than to that of Richmond and Petersburg, and penetrated much deeper into Virginia than into Georgia. Confident language by a military commander is not usually regarded as evidence of competence."

On his removal from command, Gen. Johnston went to reside in Macon, Ga., and afterward to Lincoln, N. C., where, on Feb. 23, 1865, he received orders to assume command of the Army of Tennessee and all troops in the Department of South Carolina, Georgia, and Florida, and "concentrate all available forces and drive back Sherman," who had made his march to the sea and was now moving northward through the Carolinas. The available forces were about 16,000 men, somewhat scattered. Such a force, even if

it had been well provisioned, was ridiculously inadequate to such a task, and Johnston had the greatest difficulty in procuring supplies. He proposed that Gen. Lee retreat with the Army of Northern Virginia into North Carolina and join forces with him, that they might together fall upon Sherman and crush him; but Lee answered that he could not leave Virginia. A few thousand additional troops were sent to Johnston from the West, and Hampton's cavalry came to him from Virginia. At Averysborough, 35 miles south of Raleigh, on Cape Fear river, March 16, a large part of Johnston's forces intrenched themselves in a line across the path of Sherman's left column, which was marching northward. A direct attack on the works was unsuccessful, and Kilpatrick's cavalry was roughly handled by a division of Confederate infantry. Then the flank was turned, and the Confederates retreated. Each side had lost about 500 men. They went to Bentonville, 20 miles east of Averysborough and about the same distance west of Goldsborough, toward which Sherman's columns were converging, and at Bentonville Johnston concentrated his whole force and intrenched again across the path of the left column. This time he commanded in person, and he had a very strong position, with black-jack thickets protecting his flanks. But Slocum's corps attacked vigorously as soon as they came within sight of the enemy, drove back the Confederate right flank, and planted batteries that commanded that part of the field. On the Confederate left the natural obstructions were greater and the fighting was more obstinate, but after nightfall Johnston retreated toward Raleigh and left Sherman's way open to Goldsborough. In this last action (March 19) fought by the forces of either Sherman or Johnston, the National loss was 1,600, the Confederate 2,300. Sherman's army rested for a time at Goldsborough, while Johnston's remained at Raleigh. Here Mr. Davis and his Cabinet, driven out of Richmond, passed him on their way southward, and Johnston tried in vain to convince Davis of the hopeless condition of their cause, and to induce him to end the war at once by some sort of negotiation for peace. He continued his flight, and ordered Gen. Johnston to obtain from a treasury agent \$39,000 in silver and send it after him; in-

stead of which, Johnston divided the money among his officers and men, all sharing alike. When Sherman resumed his march, Lee's army had surrendered, and on April 13 Johnston sent him a letter (which had been dictated by Davis, but was signed by Johnston), proposing an armistice and a meeting to arrange terms of peace. To this Gen. Sherman agreed, and the two commanders met on the 17th at Durham's Station. Sherman at first proposed the same terms that had been given by Grant to Lee, but Johnston rejected this, on the ground that his army was in no such straits as Lee's. He proposed instead that they arrange terms of permanent peace, and they drew up and signed a memorandum of agreement, which provided not only for the disbandment of the Confederate armies but for a general amnesty and the immediate reinstatement of the State governments at the South. This was rejected by the United States Government, as transcending the authority of a military commander in the field. On the 26th the two commanders signed a simple military agreement, by the terms of which Johnston's army was surrendered on the same terms as Lee's. In his "Narrative," Gen. Johnston argues that the failure to establish the Confederacy resulted not from lack of men or of devotion to the cause, but simply from the faulty financial policy of its Government, which neglected the opportunity, at the beginning, to send to Europe the whole of the great cotton crop of 1860 and buy at once a plentiful supply of arms and equipments, but, instead, flooded the country with a worthless paper currency.

After the war, he was successively president of a railroad company in Arkansas, president of an express company in Virginia, and an insurance agent in Savannah, and in 1877 he was elected to Congress from the Richmond, Va., district. President Cleveland appointed him Commissioner of Railroads of the United States. He was a pall-bearer at Gen. Sherman's funeral about a month before his death. His wife, a daughter of Hon. Louis McLane, died in 1886. They had no children. Gen. Johnston's only publication was his "Narrative of Military Operations during the Late War between the States" (New York, 1874).

K

KANSAS, a Western State, admitted to the Union Jan. 29, 1861; area, 82,080 square miles. The population, according to each decennial census, was 107,206 in 1860; 364,399 in 1870; 996,096 in 1880; and 1,427,096 in 1890. Capital, Topeka.

Government.—The following were the State officers during the year: Governor, Lyman U. Humphrey, Republican; Lieutenant-Governor, Andrew J. Felt; Secretary of State, William Higgins; Auditor, Charles M. Hovey; Treasurer, S. G. Stover; Attorney-General, John N. Ives; Superintendent of Public Instruction, George W. Winans; Superintendent of Insurance, Daniel W. Wilder, succeeded by William H.

McBride; Railroad Commissioners, George T. Anthony, A. R. Greene, and James Humphrey, succeeded on April 1 by William M. Mitchell; Chief-Justice of the Supreme Court, Albert H. Horton; Associate Justices, William A. Johnston and Daniel M. Valentine; Supreme Court Commissioners, Benjamin F. Simpson, J. C. Strang, and George S. Green. Attorney-General Ives was elected on the Democratic and Farmers' Alliance tickets; the other elective State officers are Republicans.

Population by Races.—The following table shows the white and colored population of the State in 1880 and 1890, as reported by the Federal census:

COUNTIES.	WHITE.		COLORED.	
	1890.	1880.	1890.	1880.
Allen.....	13,111	10,952	898	850
Anderson.....	18,888	8,571	810	156
Arapahoe.....	.....	8	.....	.....
Atchison.....	28,518	28,287	3,286	3,410
Barber.....	7,940	2,652	383	8
Barton.....	12,825	10,022	347	296
Bourbon.....	26,266	17,866	2,801	1,716
Brown.....	10,574	12,554	489	268
Buffalo.....	.....	191	.....	.....
Butler.....	23,948	18,527	106	50
Chase.....	8,050	5,962	182	119
Chautauque.....	12,069	10,915	228	144
Cherokee.....	26,883	20,081	1,362	1,861
Cherokee.....	4,401	87	.....	.....
Clark.....	2,850	159	7	4
Clay.....	15,938	12,200	208	119
Cloud.....	19,230	15,892	68	41
Coffey.....	15,652	11,004	204	483
Comanche.....	2,515	369	82	8
Cowley.....	33,819	21,316	647	221
Crawford.....	20,552	16,749	485	100
Decatur.....	8,408	4,179	10	1
Dickinson.....	22,004	15,170	178	81
Doniphan.....	12,758	13,838	776	914
Douglas.....	20,844	18,476	3,172	3,217
Edwards.....	8,515	2,353	85	56
Elk.....	12,210	10,602	6	21
Ellis.....	7,866	6,111	76	68
Ellsworth.....	9,146	8,985	125	107
Finney.....	3,277	.....	73	.....
.....	.....	410	.....	1
Ford.....	5,252	3,048	55	73
Franklin.....	19,396	15,847	881	923
Garfield.....	876	.....	5	.....
Geary.....	10,042	6,688	275	339
Gove.....	2,955	1,186	89	10
Graham.....	4,409	3,774	529	484
Grant.....	1,202	0	46	.....
Gray.....	2,406	.....	9	.....
Greeley.....	1,264	8	.....	.....
Greenwood.....	16,140	10,465	169	50
Hamilton.....	1,970	168	57	.....
Harper.....	13,180	4,114	85	19
Harvey.....	17,314	11,351	284	98
Haskell.....	1,076	.....	1	.....
Hodgeman.....	2,230	1,575	165	129
Howard.....	.....	.....	.....	.....
Jackson.....	14,418	10,520	205	165
Jefferson.....	15,917	14,772	701	790
Jewell.....	19,345	17,457	4	18
Johnson.....	16,439	15,987	986	899
Kansas.....	.....	9	.....	.....
Kearney.....	1,561	159	10	.....
Kingman.....	11,736	3,711	87	2
Kiowa.....	2,857	.....	15	.....
Labette.....	25,508	20,517	2,058	2,179
Lane.....	2,055	601	5	.....
Leavenworth.....	33,748	27,388	4,713	4,970
Lincoln.....	9,669	8,517	89	65
Linn.....	16,418	14,481	797	815
Logan.....	8,359	.....	25	.....
Lyon.....	22,150	16,295	1,016	1,027
McPherson.....	21,561	17,091	50	49
Marion.....	20,877	17,356	161	97
Marshall.....	23,608	16,905	308	231
Meade.....	2,516	296	25	.....
Miami.....	18,620	16,901	992	868
Mitchell.....	14,975	14,570	60	41
Montgomery.....	22,140	17,528	954	634
Morris.....	10,876	8,732	505	532
Morton.....	716	.....	8	.....
Neosho.....	19,022	12,387	225	75
Neosho.....	18,277	14,735	387	374
Neosho.....	4,913	3,722	1	.....
Norton.....	10,579	6,966	87	32
Osage.....	24,242	18,905	720	571
Osborne.....	11,960	12,456	122	61
Ottawa.....	12,506	10,239	74	68
Pawnee.....	5,065	5,364	134	32
Phillips.....	13,490	11,697	171	117
Pottawatomie.....	17,326	15,894	264	233
Pratt.....	7,987	1,852	180	88
Rawlins.....	6,756	1,622	.....	.....
Reno.....	26,711	12,747	863	77
Republic.....	15,973	14,898	29	16
Rice.....	14,327	9,235	122	57
Riley.....	12,941	10,166	342	324
Rooks.....	7,951	8,056	67	56

COUNTIES.	WHITE.		COLORED.	
	1890.	1880.	1890.	1880.
Rush.....	5,199	5,485	5	5
Russell.....	7,271	7,317	62	54
Saline.....	16,945	13,523	497	299
Scott.....	1,202	48	.....	.....
Sedgwick.....	42,203	18,459	1,407	268
Sequoyah.....	.....	508	.....	.....
Seward.....	1,498	5	5	.....
Shawnee.....	42,900	23,655	6,144	5,856
Sheridan.....	3,700	1,567	.....	.....
Sherman.....	5,243	13	18	.....
Smith.....	15,611	13,868	2	15
Stafford.....	8,820	4,632	200	123
Stanton.....	1,031	5	.....	.....
Stevens.....	1,809	12	19	.....
Sumner.....	30,087	20,608	174	104
Thomas.....	5,532	101	6	.....
Trego.....	2,404	2,510	41	25
Wabash.....	10,943	8,074	748	844
Wallace.....	2,429	679	89	7
Washington.....	22,577	14,891	17	19
Webster.....	1,820	14	7	.....
Wellington.....	15,201	13,698	80	77
Woodson.....	8,947	6,467	73	56
Wyandotte.....	47,340	14,589	7,028	4,976
The State.....	1,374,882	952,135	51,251	43,107

There were 107 Chinese and 856 Indians in the State in 1890.

Legislative Session.—The Legislature began its regular biennial session on Jan. 13 and adjourned on March 13. As the adherents of the new People's or Farmers' Alliance party were in control of the Lower House, and of both Houses on joint ballot, the proceedings of the session were watched by the public with great interest. The choice of a successor to United States Senator John J. Ingalls first claimed the attention of the legislators. The Republicans nominated Senator Ingalls, and made earnest efforts to win over the Alliance members to his support, but without success. The latter decided to nominate a candidate directly representing their own principles, and in caucus on Jan. 26 selected William A. Peffer, on the seventeenth ballot the vote standing Peffer, 56; John F. Willits, 38. The Democratic candidate was Charles W. Blair. On the separate ballot in each branch, on Jan. 27, the following vote was cast: Senate—Ingalls 35, Peffer 2, scattering 3; House—Ingalls 23, Peffer 96, Blair 5. The first joint ballot, which was taken on the following day, resulted in the election of Peffer by the following vote: Ingalls 58, Peffer 101, Blair 3, for other candidates 3.

An important act of the session provides a system of law for the promotion of irrigation. It declares that all natural waters, whether standing or running, and whether surface or subterranean, in that portion of the State west of the ninety-ninth meridian, shall be devoted, first, to purposes of irrigation in aid of agriculture, subject to ordinary domestic uses, and, second, to other industrial purposes, and may be diverted from natural beds, basins, or channels for such purposes and uses, provided that existing vested rights in such waters shall not be affected without due legal condemnation and compensation. Provision is made for the creation of irrigation districts, which are authorized to construct ditches and works, to borrow money and issue bonds, and to levy taxes to pay for such works. The charges for water supplied by

any private person or corporation to another for irrigation shall be fixed in each county by the county commissioners, and the rights and duties of such person and corporation, as well as of public irrigation districts, are defined at length. The sinking of artesian wells and the rights of owners thereof are also regulated.

By another act the business of public warehouse men is carefully defined and restricted. The maximum rates for storage and handling of grain, including cost of receiving and delivering, are fixed at one cent a bushel for the first fifteen days or part thereof, one half cent a bushel for each fifteen days or part thereof after the first fifteen, but not over four cents a bushel in the aggregate for continuous storage from Nov. 15 to May 15 following. Any board of trade issuing licenses hereunder shall appoint a State weighmaster and such assistants as shall be needed for the transaction of business in its locality. There shall also be a State inspector of grain, appointed by the Governor, who shall appoint deputy inspectors upon the nomination of local boards of trade. The inspectors shall determine the grade of grain offered to public warehouses, but an appeal may be taken from their decision.

The sum of \$60,000 was appropriated to purchase seed grain for those farmers who lost their crops by reason of the drought of 1890. The railroad commissioners were authorized to purchase such grain and the county commissioners of each county to distribute it, taking the note of each beneficiary for the cost of the grain supplied to him. In addition, certain specified counties were authorized, on their own account, to purchase and distribute seed grain, taking the note of each beneficiary, and to issue bonds for the sums needed for such purchase.

A new law for the management of the State Penitentiary provides for a board of three directors, to be appointed by the Governor, one each year, for a term of three years. The warden of the Penitentiary shall be appointed by the Governor. By another act is established a State Board of Public Works, composed of three members appointed by the Governor.

For each of the fiscal years ending June 30, 1892, and June 30, 1893, the rate of State taxation for current expenses was fixed at 3-5 mills, and for interest on the public debt at .2 mill, on each dollar. Numerous acts were passed authorizing various townships and cities to issue bonds and use the proceeds in building flouring mills, or in aid thereof. A new apportionment of members of the Legislature, on the basis of the census of 1890, was made at this session. Eight hours were declared to constitute a day's work for all laborers, workmen, mechanics, or other persons employed by or in behalf of the State, or by or in behalf of any county, city, township, or other municipality of the State.

Provision was made for submitting to the people, at the November election in 1892, the question whether a convention shall be called to revise, amend, or change the State Constitution.

Another important act provides for the regulation and control of State banks. It requires from each bank a sworn quarterly statement showing the condition of its business. It creates the office of State Bank Commissioner, with

salary of \$2,500, and empowers him to close any bank that does not comply with the law.

An act to prevent ownership of land by non-resident aliens provides that "every non-resident alien, firm of aliens, or corporation incorporated under the laws of any foreign country, shall be incapable of acquiring title to or taking or holding any land or real estate in this State, by descent, devise, purchase, or otherwise, except that the heirs of aliens who have heretofore acquired lands in this State under the laws thereof, and the heirs of aliens who may acquire lands under the provisions of the act, may take such lands by devise or descent and hold them for the space of three years and no longer, if such alien at the time of so acquiring such lands is of the age of twenty-one years, and if not twenty-one years of age, then for the term of five years from the time of so acquiring such lands; and if at the end of the time herein limited such lands so acquired have not been sold to *bona fide* purchasers for value, or such alien heirs have not become actual residents of this State, the lands shall revert and escheat to the State of Kansas." Corporations or associations in which more than 20 per cent. of the stock is owned by others than citizens of the United States are prohibited from holding real estate in the State. But alien residents of the United States who have declared their intention to become citizens may acquire and hold real estate for six years, when it shall escheat to the State if they have not become full citizens. Minor alien residents of the United States may acquire and hold real estate for six years after they might have declared their intention of becoming citizens under the naturalization laws, subject to escheat if they have not become full citizens in that time.

The sum of \$60,000 was appropriated to continue the construction of the main and central wings of the State House, the further sum of \$60,000 for building and equipping a cottage and for other improvements at the Ossawatimie Insane Asylum, and the sum of \$9,000 for an industrial building at the Deaf and Dumb Institute at Olathe.

Bills to establish the Australian ballot system, to resubmit the prohibitory amendment to the people, to establish reduced rates on railroads, and to permit woman suffrage were discussed at great length, but failed to pass both Houses.

Other acts of the session were as follow:

Changing the bounty on sugar manufactured in the State from beets, cane, or other plant grown in the State, to three fourths of one cent a pound.

Prescribing the manner of conducting primary elections.

Appropriating \$3,500 to establish an experiment station at the State University to propagate the contagion or infection supposed to be destructive to chinch bugs, and to furnish it to farmers free of charge.

To prohibit the sale or gift of intoxicating or stupefying liquors or drugs to inmates of soldiers' homes.

Declaring the first Monday in September of each year a legal holiday, to be known as Labor Day.

Allowing sureties on official bonds to fix the limit of their liability thereon.

Regulating the casing of oil and gas wells, and the mode of plugging them when abandoned.

Prohibiting combinations to prevent competition among persons engaged in buying and selling live stock.

To prohibit the editing, publishing, circulating, disseminating, and selling of newspapers or other publications devoted largely to the publication of scandals, intrigues between men and women, and immoral conduct.

Providing a new law for the regulation, support, and maintenance of the common schools in cities of the first class.

Accepting the provisions of an act of Congress granting aid to State or Territorial homes for disabled soldiers and sailors.

To abolish survivorship in joint tenancy.

To protect associations and unions of working men in their labels, trade-marks, and forms of advertising.

Accepting the act of Congress granting aid for the endowment and support of colleges of agriculture and the mechanic arts.

Increasing the salaries of the Secretary of State, Treasurer, Auditor, and certain other State officers, and providing for the payment of assistants and clerks for State offices.

The Botkin Impeachment.—Charges of misconduct in office against Judge Theodosius Botkin, of the Thirty-second Judicial Circuit, were brought to the attention of the Lower House of the Legislature during its session this year, as a result of which that body, after investigation, framed numerous articles of impeachment, charging Judge Botkin with intoxication and with unjudicial conduct on the bench. For the purpose of trying the case the Senate reassembled on April 20 as a court of impeachment. Several weeks were occupied in taking testimony and in hearing arguments of counsel. A vote upon the several articles was not taken till May 26, when the judge was acquitted upon every article, although upon the articles charging unjudicial conduct in court there was a narrow majority against him of the Senators voting.

Education.—The State University continues to show unusual prosperity. At the close of this year there was an enrollment of about 590 resident students, an increase of more than 100 over the number enrolled at the same date last year.

Mortgage Debts.—The Federal Census Bureau reports that the total number of mortgages on real estate recorded in the State during the ten years ending in 1899 was 620,049, of which 415,622, or 67.03 per cent. of the total, were on acres, and 204,427, or 32.97 per cent., were on lots. The yearly totals exhibit the fact that in 1880 the amount of recorded mortgages was \$18,625,284; in 1881, \$21,343,449; in 1882, \$22,410,810; in 1883, \$27,697,409; in 1884, \$39,579,854; in 1885, \$53,203,087; in 1886, \$76,259,403; the amount reached \$97,520,069 in 1887; declined to \$69,977,822 in 1888, and to \$56,082,244 in 1889. In 1880 the amount of mortgages recorded against acres in the State was \$15,425,775; in 1881, \$17,514,735; in 1882, \$17,634,017; in 1883, \$21,463,133; in 1884, \$31,241,851; in 1885, \$42,115,311; in 1886, \$56,724,122; and the largest amount, \$61,227,479, was in 1887, from which year the amount decreased to \$44,865,279 in 1888, and to \$35,006,542 in 1889. The *per capita* mortgage debt of the State is \$165.

Coal.—The coal measures of Kansas cover about 10,000 square miles, underlying the entire eastern portion of the State. The coals are bituminous, excellent for coking, steam, gas, smelting, and domestic purposes. Lignite deposits have also been worked to some extent along the western limits of the coal areas in Cloud, Re-

public, Ellsworth, Russell, and Jewell Counties. Regular mining operations are conducted in but six counties. The veins vary from one to five feet in thickness, and are mined by shaft as well as by "stripping." The scarcity of wood in the western part of the State is stimulating the developing of the coal-beds as well as the construction of branch railroad lines. The output for 1889 is reported as 2,230,763 short tons, valued at \$3,294,754, or an average of \$1.48 a ton at the mines. The average number of persons employed in 1889 was 5,065, and the amount of wages paid \$2,320,591. The State conducts coal-mining operations at Lansing, Leavenworth County, where the convicts in the Penitentiary are employed.

The Prohibitory Law.—On May 25 the United States Supreme Court rendered its decision in the case of *Wilkerson vs. Rahrer*, appealed in 1890 from the Circuit Court for the district of Kansas, in which the chief question at issue was whether the Kansas prohibitory law ought to be re-enacted before it could operate to prevent the sale of imported liquors in the original packages. The court unanimously decided that such re-enactment was not necessary; that by virtue of the previous decision of the court in *Leisy vs. Hardin* the Kansas law had been made inoperative upon imported liquors only, but that the Wilson law, subsequently enacted by Congress, had placed imported liquors in the same category as liquors already within the State, and had therefore made the State law again operative upon such liquors.

World's Fair Convention.—As the Legislature adjourned without passing an appropriation in aid of the World's Columbian Exposition of 1893, a call was issued on March 17, by the Board of Agriculture, for a State convention to meet at Topeka on April 23, to devise means to secure a proper representation of the State at the Exposition. About 300 delegates from all parts of the State attended the convention. They decided that at least \$100,000 ought to be raised in order to insure a creditable exhibit. A committee of 21 members was elected and organized as a Bureau of Promotion. On April 30 this bureau issued an address to "The People of the State," which called upon each county and each railroad company operating lines within the State to contribute such portion of the sum of \$100,000 as the assessed value of their property for the year 1890 bore to the total assessed value of the property of the State for that year. To raise the allotted sum promptly, the organization of County Columbian Associations was recommended, and plans for such associations were submitted. The April convention had agreed upon June 16 as the day for assembling another convention composed of delegates representing the subscribers to the fund, for the purpose of electing a permanent board of managers. The Bureau of Promotion, at their meeting on June 10, finding that sufficient progress had not been made in securing subscriptions, postponed the date for assembling the convention until Sept. 16. On this latter date the records showed that counties and railroad companies representing \$46,560.56 of the apportionment had paid in the first installment or had assented to the plan and paid in part, and could be relied upon for the re-

mainder. Delegates representing these subscriptions met in convention at Topeka on Sept. 16, and elected a board of managers, who thereafter attended to the collection of subscriptions and to the task of securing a creditable State exhibit.

KENTUCKY, a Southern State, admitted to the Union June 1, 1792; area, 40,400 square miles. The population, according to each decennial census since admission, was 220,955 in 1800; 406,511 in 1810; 564,135 in 1820; 687,917 in 1830; 779,828 in 1840; 982,405 in 1850; 1,155,684 in 1860; 1,321,011 in 1870; 1,648,690 in 1880; and 1,858,635 in 1890. Capital, Frankfort.

Government.—The following were the State officers during the year: Governor, Simon B. Buckner, Democrat, succeeded by John Young Brown, Democrat; Lieutenant-Governor, James W. Bryan, succeeded by Mitchell C. Alford; Secretary of State, George M. Adams, succeeded by John W. Headley; Auditor, L. C. Norman; Treasurer, Henry S. Hale; Attorney-General, P. W. Hardin, succeeded by William J. Hendrick; Superintendent of Public Instruction, Joseph D. Pickett, succeeded by Edward P. Thompson; Insurance Commissioner, Henry T. Duncan; Register of the Land Office, Thomas H. Corbett, succeeded by G. B. Swango; Commissioner of Agriculture, C. Y. Wilson; Railroad Commissioner, I. A. Spaulding, J. F. Hagar, W. B. Fleming; Chief Justice of the Court of Appeals, William H. Holt; Associate Justices, William S. Pryor, Joseph H. Lewis, and Caswell Bennett. Gov. Brown and the other State officers elected with him in August assumed office on Sept. 1.

Population by Races.—The following table shows the white and colored population of the State in 1880 and 1890, as reported by the Federal census:

COUNTIES.	WHITE.		COLORED.	
	1890.	1880.	1890.	1880.
Adair.....	11,872	10,907	1,849	2,171
Allen.....	12,561	11,020	1,131	1,069
Anderson.....	9,562	8,292	1,045	1,069
Ballard.....	6,912	12,553	1,473	1,725
Barren.....	17,672	17,380	3,313	4,941
Bath.....	11,223	9,965	1,585	2,017
Bell.....	9,551	5,874	759	151
Boone.....	11,093	10,764	1,133	1,232
Bourbon.....	10,051	8,642	6,925	7,314
Boyd.....	13,263	11,603	764	556
Boyle.....	8,089	7,193	4,559	4,737
Bracken.....	11,717	12,693	652	816
Breathitt.....	8,582	7,537	173	185
Breckinridge.....	16,782	15,232	2,194	2,204
Bullitt.....	7,293	7,214	1,063	1,307
Butler.....	13,174	11,361	732	820
Caldwell.....	10,431	9,095	2,755	2,157
Calloway.....	13,497	12,080	1,178	1,215
Campbell.....	48,496	36,997	712	441
Carlisle.....	7,187	.....	425	.....
Carrick.....	8,493	8,152	773	771
Carter.....	17,069	11,974	135	871
Casey.....	11,335	10,375	513	603
Christian.....	15,753	17,043	15,599	14,689
Clark.....	10,574	7,929	4,600	4,186
Clay.....	11,362	9,516	467	706
Clinch.....	6,777	6,901	270	311
Crittenden.....	12,192	10,537	927	1,151
Cumberland.....	7,416	7,827	1,036	1,567
Daviess.....	27,650	22,876	5,468	4,854
Edmonson.....	7,542	6,667	463	556
Elliot.....	9,179	6,524	315	43
Estill.....	10,223	9,349	618	511
Fayette.....	21,899	16,049	18,797	12,874
Fleming.....	14,437	13,646	1,641	1,575
Floyd.....	11,102	9,977	133	199
Franklin.....	16,222	13,839	5,086	4,860

COUNTIES.	WHITE.		COLORED.	
	1890.	1880.	1890.	1880.
Fulton.....	7,773	6,371	2,227	1,605
Gallatin.....	4,109	4,185	502	647
Garrard.....	8,109	8,009	3,029	3,695
Grant.....	12,138	12,350	533	733
Graves.....	25,337	21,287	8,195	2,851
Grayson.....	18,189	15,377	499	407
Green.....	9,516	9,468	1,947	2,403
Greenup.....	11,563	12,932	338	489
Hancock.....	8,415	7,759	799	803
Hardin.....	19,043	19,282	2,256	3,282
Harlan.....	6,033	5,164	159	114
Harrison.....	14,862	13,572	2,552	2,932
Hart.....	14,380	14,294	2,109	2,330
Henderson.....	21,141	16,943	3,391	7,572
Henry.....	11,767	11,623	2,397	2,869
Hickman.....	9,514	8,637	1,822	1,964
Hopkins.....	19,850	16,412	3,625	2,710
Jackson.....	8,206	6,605	55	45
Jefferson.....	164,827	120,403	88,749	25,595
Jessamine.....	7,521	6,463	3,727	4,401
Johnson.....	10,939	9,052	88	103
Kenton.....	51,402	41,453	2,756	2,528
Knott.....	5,363	.....	70	.....
Knox.....	12,999	9,922	763	662
La Rue.....	8,622	8,746	811	1,047
Laurel.....	13,203	8,864	540	267
Lawrence.....	17,458	13,021	213	141
Lee.....	5,736	4,024	469	230
Leslie.....	3,924	3,712	40	28
Letcher.....	6,594	6,459	86	142
Lewis.....	14,618	12,925	135	229
Lincoln.....	12,259	11,172	3,703	3,903
Livingston.....	8,717	8,130	749	1,034
Logan.....	17,155	16,977	6,645	7,351
Lyon.....	6,153	5,250	1,475	1,433
McCracken.....	15,239	11,573	5,510	4,833
McLean.....	9,072	8,445	815	843
Madison.....	16,872	14,764	7,476	7,238
Magoffin.....	9,013	6,794	173	150
Marion.....	12,443	11,139	3,204	3,504
Marshall.....	10,943	9,207	344	440
Martin.....	4,156	3,025	23	32
Mason.....	16,521	16,077	4,251	4,392
Mende.....	8,674	9,049	810	1,274
Menifee.....	4,633	3,707	33	43
Mercer.....	11,924	10,994	3,110	3,143
Metcalf.....	5,949	8,837	922	1,036
Monroe.....	10,416	10,080	573	661
Montgomery.....	8,632	7,000	3,734	3,566
Morgan.....	11,199	8,422	50	33
Muhlenberg.....	15,571	13,020	2,334	2,078
Nelson.....	12,536	11,593	3,851	4,716
Nicholas.....	9,442	10,119	1,322	1,750
Ohio.....	21,580	18,205	1,366	1,464
Oldham.....	5,666	5,456	1,633	2,211
Owen.....	16,242	15,693	1,434	1,508
Owsley.....	5,890	4,533	85	33
Pendleton.....	15,519	15,922	527	750
Perry.....	6,163	5,463	163	139
Pike.....	17,201	12,826	177	174
Powell.....	4,304	3,352	394	257
Pulaski.....	24,397	20,122	1,333	1,196
Robertson.....	4,519	5,531	165	233
Rockcastle.....	9,637	9,233	184	437
Rowan.....	6,027	4,814	102	106
Russell.....	7,501	7,237	275	354
Scott.....	11,402	9,963	5,034	5,092
Shelby.....	11,050	11,255	4,362	5,555
Simpson.....	5,413	7,544	2,405	2,797
Spencer.....	5,413	5,414	1,346	1,626
Taylor.....	7,397	7,500	1,456	1,899
Todd.....	10,852	9,427	6,461	6,567
Trigg.....	10,227	10,449	3,675	4,040
Trimble.....	6,311	6,594	329	577
Union.....	15,513	14,646	2,716	3,163
Warren.....	23,130	19,892	7,975	7,639
Washington.....	11,526	11,938	2,096	2,430
Wayne.....	12,221	11,613	631	396
Webster.....	15,225	12,550	1,971	1,666
Whitley.....	16,321	11,752	760	237
Wolfe.....	7,055	5,563	125	75
Woodford.....	7,495	6,153	4,385	5,643
The State.....	1,585,526	1,377,179	272,981	271,451

There were also 29 Chinese, 1 Japanese, and 98 Indians in the State in 1890.

Finances.—At the close of the fiscal year ending June 30, 1889, there was a balance in the State treasury of \$72,925.24; the total receipts for the year following were \$3,709,819.41, and the total expenditures for the same period were \$3,811,248.32, leaving a deficit on June 30, 1890, of \$28,503.67. For the year ending June 30, 1891, the total receipts were \$3,652,343.72, and the total expenditures \$3,623,829.01, leaving a balance on the latter date, after deducting the deficit existing at the beginning of the year, of \$11.04. Although the books of the State Treasurer showed this slight balance, there was, in fact, at that time a deficit of \$229,025.77, for which amount warrants had been issued by the State Auditor, and were paid by the banks of the city of Frankfort, by virtue of an arrangement made with them by the Treasurer in consideration of his having placed with them the State deposits at an agreed rate of interest. The Auditor estimates that there will be, at the close of the present fiscal year, June 30, 1892, a deficit of \$472,755.71. The new Constitution provides that so much of any moneys as may be received by the Commonwealth from the United States, under the recent act of Congress refunding the direct tax, shall become a part of the school fund; but that the General Assembly may authorize the use by the Commonwealth of the money so received, or any part thereof, in which event a bond shall be executed to the Board of Education for the amount so used. The Governor recommends that such an appropriation of this money be made, in order that it may be used to redeem these outstanding warrants.

The State tax rate for 1891 was 42.5 cents on each \$100, of which 15 cents was for general State expenses, the remainder being devoted to school purposes. The bonded State debt remained unchanged in amount during the year, being \$674,000.

Education.—The following public-school statistics, covering the year ending June 30, 1888, and June 30, 1889, are the latest available:

WHITE SCHOOLS.

ITEMS.	1888.	1889.
Highest number attending.....	288,024	288,480
Average number attending.....	192,594	193,721
Number of school age.....	549,737	555,809
Teachers, male.....	3,959	3,910
Teachers, female.....	3,599	3,751
Total.....	7,558	7,661
Average wages per month.....	\$31.21	\$32.76
Value of school property.....	\$2,968,604.87	\$3,226,565.76
State fund.....	\$1,071,187.45	\$1,161,990.92
Raised by local taxation, etc.....	\$558,895.47	\$572,562.66

COLORED SCHOOLS.

ITEMS.	1888.	1889.
Highest number attending.....	42,811	42,526
Average number attending.....	28,455	28,389
Number of school age.....	107,170	109,158
Teachers, male.....	615	595
Teachers, female.....	544	602
Total.....	1,159	1,200
Average wages.....	\$34.87	\$37.82
Value of school property.....	\$284,142.55	\$317,067.90
State fund.....	\$203,629.00	\$228,996.08
Raised by local taxation, etc.....	\$61,970.79	\$67,786.19

Charities.—At the three State asylums for the insane there were about 2,120 patients on Dec.

31. Each institution has nearly reached the limit of its capacity.

Prisons.—The report of the State Penitentiary at Frankfort for the two years ending Dec. 1, 1891, is as follows: Number of prisoners on Dec. 1, 1889, 1,127; number received for the year ending Dec. 1, 1890, 611, and for the year ending Dec. 1, 1891, 791; number discharged for the year ending Dec. 1, 1890, 837, and for the year ending Dec. 1, 1891, 779; number in confinement on Dec. 1, 1891, 913. The reduction in prison population during the period is due to the transfer of 534 prisoners to the new branch Penitentiary at Eddyville. The number remaining in the latter institution on Dec. 31, of this year was 381, and the number at Frankfort was 893.

The buildings at Eddyville were completed and turned over to the State on Dec. 24, 1890. A total of \$484,143.93 was appropriated by the Legislature for their construction, of which \$470,753.41 was expended.

Coal.—The coal areas of the State represent both the Appalachian and the Central or Illinois fields. The Appalachian field covers the eastern section of the State to the extent of 10,000 square miles, and underlies thirty counties.

In the western part of this State the lower extremity of the Central field extends over about 4,000 square miles. Twelve coal seams are identified in this district, but only five are worked to any extent.

The various seams comprise all varieties, from bituminous shale to the finest cannel coal. The State possesses some of the finest beds of cannel coal known in the country, which are found in both the eastern and western districts.

The product of coal in Kentucky during the census year ending June 30, 1880, was 946,288 short tons. During the year 1889 the total product was 2,399,755 short tons, valued at \$2,374,339. The number of employes in 1889 was 5,260; the wages paid, \$1,756,363; and the capital invested, \$6,581,380, of which the largest amount was in Hopkins County, \$1,268,440.

Constitutional Convention.—The convention that assembled at Frankfort on Sept. 8, 1890, to revise the State Constitution, after taking a recess from Dec. 19 to Jan. 6, 1891, continued its sessions until April 11, when it adjourned to meet on the first Wednesday of September following, having completed a new Constitution and provided for its submission to a vote of the people at the August election. One of the chief evils permitted under the old Constitution was that of local or special legislation. The General Assembly of 1889-'90 sat one hundred and forty-nine days, and passed local laws, including index, covering 4,893 pages, at a cost to the State in printing of \$17,223.65, and in other respects of \$151,014.82. The average time and cost of the four preceding Legislatures had been but little better. The new Constitution prohibits special laws on a large number of subjects and in all cases where general laws can govern, and limits the regular sessions of the Legislature to sixty days. Other important features of the new Constitution are the provisions forbidding lotteries in the State; establishing the secret or Australian ballot system for all elections (under the old Constitution the *viva-voce* system of voting prevailed); prohibiting the working of con-

viets outside the Penitentiary; providing for the government of counties, cities, and towns by uniform laws; providing a uniform system of courts; limiting the rates of local taxation; allowing county officers regular salaries, instead of fees; and providing an easy method of constitutional amendment by vote of the people. Under the old Constitution amendment was impossible. The date of the State election was changed from August to November. The number of grand jurors was reduced from 16 to 12, and the General Assembly may provide that three fourths of a jury may render a verdict in civil cases. The proslavery provisions of the old Constitution were replaced by a declaration in the Bill of Rights prohibiting slavery and involuntary servitude, except as a punishment for crime, whereof the party shall have been duly convicted. The time for the regular meeting of the General Assembly was changed from December to the first Tuesday after the first Monday in January of the odd-numbered years. Senators shall be chosen for four years, half of their number being elected every second year, and Representatives shall be chosen for two years. The number of Senators shall be 38, and of Representatives 100. Other provisions are as follow:

No person who may have been a collector of taxes or public moneys for the Commonwealth, or for any county, city, town, or district, or the assistant or deputy of such collector, shall be eligible to the General Assembly, unless he shall have obtained a quietus six months before the election for the amount of such collection, and for all public moneys for which he may have been responsible. The General Assembly shall have no power to enact laws to diminish the resources of the sinking fund as now established by law until the debt of the Commonwealth be paid, but may enact laws to increase them.

The General Assembly may contract debts to meet casual deficits or failures in the revenue; but such debts shall not at any time exceed five hundred thousand dollars: *Provided*, The General Assembly may contract debts to repel invasion, suppress insurrection, or, if hostilities are threatened, provide for the public defense.

No act of the General Assembly shall authorize any debt to be contracted in behalf of the Commonwealth, except for the purposes above mentioned, unless provision be made therein to levy and collect an annual tax sufficient to pay the interest stipulated, and to discharge the debt within thirty years; nor shall such act take effect until it shall have been submitted to the people at a general election, and shall have received a majority of all the votes cast for and against it: *Provided*, The General Assembly may contract debts by borrowing money to pay any part of the debt of the State, without submission to the people, and without making provision in the act authorizing the same for a tax to discharge the debt so contracted, or the interest thereon.

The General Assembly shall have no power to release, extinguish, or authorize the releasing or extinguishing, in whole or in part, the contract, indebtedness, liability, or obligation of any corporation or individual to this Commonwealth, or to any county or municipality thereof.

The General Assembly shall have no power to limit the amount to be recovered for injuries resulting in death, or for injuries to person or property.

No act, except general appropriation bills, shall become a law until ninety days after the adjournment of the session at which it was passed, except in cases of emergency.

No bill shall become a law until the same shall have been signed by the presiding officer of each

of the two Houses in open session; and before such officer shall have affixed his signature to any bill, he shall suspend all other business, declare that such bill will now be read, and that he will sign the same to the end that it may become a law. The bill shall then be read at length and compared.

The credit of this Commonwealth shall never be given or loaned in aid of any person, association, municipality, or corporation.

The Governor and Lieutenant-Governor shall be elected for the term of four years, and shall be ineligible for re-election. The Governor shall have the power to fill vacancies by granting commissions, which shall expire when such vacancies shall have been filled according to the provisions of this Constitution.

The Lieutenant-Governor shall, by virtue of his office, be President of the Senate, have a right, when in committee of the whole, to debate and vote on all subjects, and when the Senate is equally divided, to give the casting vote.

A Treasurer, Auditor of Public Accounts, Register of the Land Office, Commissioner of Agriculture, Labor, and Statistics, and an Attorney-General shall be elected by the qualified voters of the State at the same time the Governor is elected, for the term of four years.

The Attorney-General shall have been a practicing lawyer eight years before his election.

The Treasurer, Secretary of State, Commissioner of Agriculture, Labor, and Statistics, Attorney-General and Register of the Land Office shall be ineligible to re-election for the succeeding four years after the expiration of the term for which they shall have been elected; and the Auditor of Public Accounts shall be ineligible to re-election for the succeeding four years after he shall have held the office for two succeeding terms.

The Court of Appeals shall have appellate jurisdiction only, which shall be coextensive with the State.

This court, after 1894, shall consist of not fewer than five nor more than seven judges. They shall be elected by districts, and the General Assembly shall divide the State into districts, in each of which one judge shall be elected.

A circuit court shall be established in each county.

Every male citizen of the United States of the age of twenty-one years, who has resided in the State one year and in the county six months, and in the precinct in which he offers to vote sixty days, next preceding the election, shall be a voter in said precinct and not elsewhere.

Not more than one election each year shall be held in this State, or in any city, town, district, or county thereof. All elections of State, county, city, town, or district officers shall be held on the first Tuesday after the first Monday in November; but no officer of any city, town, or county, or of any subdivision thereof, shall be elected in the same year in which members of the House of Representatives of the United States are elected. District or State officers, including members of the General Assembly, may be elected in the same year in which members of the House of Representatives of the United States are elected. All elections by the people shall be between the hours of 6 o'clock A. M. and 7 o'clock P. M., but the General Assembly may change said hours, and all officers of any election shall be residents and voters in the precinct in which they act. The General Assembly shall provide by law that all employers shall allow employees, under reasonable regulations, at least four hours on election days in which to cast their votes.

The cities and towns of the State shall be divided into six classes, according to population, and the organization and powers of each class shall be defined by general laws.

The tax rate of cities, towns, counties, taxing districts, and other municipalities, for other than school purposes, shall not, at any time, exceed the following rates, viz: For all towns or cities having a population of 15,000 or more, \$1.50 on the hundred dol-

lars; for all towns or cities having less than 15,000 and not less than 10,000, \$1 on the hundred dollars; for all towns or cities having less than 10,000, 75 cents on the hundred dollars; and for counties and taxing districts, 50 cents on the hundred dollars; unless it should be necessary to enable such city, town, county, or taxing district to pay the interest on, and provide a sinking fund for the extinction of, indebtedness contracted before the adoption of this Constitution. No county, city, town, taxing district, or municipality shall be authorized or permitted to become indebted, in any manner or for any purpose, to an amount exceeding in any year the income and revenue provided for such year without the assent of two thirds of the voters thereof, voting at an election to be held for that purpose; and any indebtedness contracted in violation of this section shall be void.

The respective cities, towns, counties, taxing districts, and municipalities shall not be authorized or permitted to incur indebtedness to an amount, including existing indebtedness, in the aggregate exceeding the following-named maximum percentages on the value of the taxable property therein, viz: Cities of the first and second classes, and of the third class having a population exceeding 15,000, 10 per cent.; cities of the third class having a population of less than 15,000, and cities and towns of the fourth class, 5 per cent.; cities and towns of the fifth and sixth classes, 3 per cent.; and counties, taxing districts, and other municipalities, 2 per cent.

Whenever any county, city, town, taxing district, or other municipality is authorized to contract an indebtedness, it shall be required, at the same time, to provide for the collection of an annual tax sufficient to pay the interest on said indebtedness, and to create a sinking fund for the payment of the principal thereof, within not more than forty years from the time of contracting the same.

The Commonwealth shall not assume the debt of any county, municipal corporation, or political subdivision of the State, unless such debt shall have been contracted to defend itself in time of war, to repel invasion, or to suppress insurrection.

The credit of the Commonwealth shall not be pledged or loaned to any individual, company, corporation or association, municipality, or political subdivision of the State; nor shall the Commonwealth become an owner or stockholder in, nor make donation to, any company, association, or corporation, nor shall the Commonwealth construct a railroad or other highway.

The General Assembly shall not authorize any county or subdivision thereof, city, town, or incorporated district, to become a stockholder in any company, association, or corporation, or to obtain or appropriate money for, or to loan its credit to, any corporation, association, or individual, except for the purpose of constructing or maintaining bridges, turnpike roads, or gravel roads.

In distributing the school fund no distinction shall be made on account of race or color, and separate schools for white and colored children shall be maintained.

No railroad, steamboat, or other common carrier, under heavy penalty to be fixed by the General Assembly, shall give a free pass or passes, or shall, at reduced rates not common to the public, sell tickets for transportation to any State, district, city, town, or county officer, or member of the General Assembly, or judge, and any State, district, city, town, or county officer, or member of the General Assembly, or judge, who shall accept or use a free pass or passes, or shall receive or use tickets for transportation at reduced rates not common to the public, shall forfeit his office.

Consolidation of competing lines of railroad is forbidden.

A commission is established, to be known as the "Kentucky Railroad Commission," which shall be composed of three commissioners, appointed by the Governor, by and with the advice and consent of the

Senate, one from each superior court district. No person in the employ, or in any wise pecuniarily interested as a common carrier, or in a railroad corporation, or in railroad business, shall hold such office. The powers and duties of the Railroad Commissioners shall be regulated by law, and until otherwise provided by law the commission so created shall have the same powers and jurisdiction, perform the same duties, be subject to the same regulations, and receive the same compensation, as now conferred, prescribed and allowed by law to the existing Railroad Commissioners.

All wage-earners in this State employed in factories, mines, workshops, or by corporations shall be paid for their labor in lawful money. The General Assembly shall prescribe adequate penalties for violations of this section.

The seat of Government shall continue in the city of Frankfort, unless removed by a vote of two thirds of each House of the first General Assembly that convenes after the adoption of this Constitution.

If three fifths of the members of each House of the General Assembly shall approve an amendment to this Constitution, it shall be submitted to the people at the next general election, and if a majority of the the votes cast shall be in favor of such amendment, it shall become a part of the Constitution; but no more than two proposed amendments shall be submitted to the people at one time, and the first General Assembly hereunder shall have no power to propose amendments.

This Constitution, as submitted to the people by the convention, was at first attacked by an influential section of the Democratic party, and when the Democratic nominating convention met in May the party was so divided with reference thereto that no platform declaration was made on this subject. Later there was a change of feeling, and before the election was held the outspoken opponents of the instrument had become very few. The people voted overwhelmingly in its favor. The Constitutional Convention, which adjourned in April till the first Wednesday of September, reassembled on the latter day, and, in spite of the fact that the people had emphatically approved their work, proceeded to make amendments and alterations. The section of the new instrument giving the Governor power to appoint, with consent of the Senate, all State officers not required to be elected by the people, was stricken out. The State Auditor, Superintendent of Public Instruction, and Clerk of the Court of Appeals were made ineligible for re-election. Special legislation was allowed on questions of local option, turnpikes, bridges, and public roads, public improvements and buildings, and common schools and paupers.

The Railroad Commissioners after the term of the first board appointed by Gov. Brown shall expire, shall be elected by the people. Numerous minor changes were made, and the instrument in its altered form was finally signed and published as the law of the State on Sept. 28, on which day the convention adjourned *sine die*.

Political.—On May 14, a State convention of the Democratic party met at Louisville, and nominated the following ticket for State officers: For Governor, John Young Brown (chosen on the thirteenth ballot over three competitors, Cassius M. Clay, Jr., P. W. Hardin, and John D. Clardy); for Lieutenant-Governor, Mitchell C. Alford; for Treasurer, H. S. Hale; for Auditor, L. C. Norman; for Attorney-General, W. J. Hendrick; for Superintendent of Public Instruction, E. P. Thompson; for Register of the

Land Office, G. B. Swango; for Clerk of the Court of Appeals, Abram Addams.

The platform contains the following declarations:

We insist that tariff reform is the paramount question before the American people, and denounce the McKinley bill as the most outrageous measure of taxation ever proposed in the American Congress.

Recognizing the fact that the United States is the greatest silver-producing country in the world, and that both gold and silver were equally the money of the Constitution from the beginning of the Republic until the hostile and fraudulent legislation of the Republican party against silver, which unduly contracted the circulating medium of the country, and feeling that the great interests of the people demand more money for use in channels of trade and commerce, we tender our gratitude to the Democrats in the last Congress for their almost unanimous votes in both Houses in favor of free coinage of silver and demand its restoration to the position of equality before the law, given to it by our fathers.

No reference was made to the question of adopting the proposed new State Constitution. The convention also refused to take action on a resolution approving Grover Cleveland as the next Democratic presidential candidate.

On May 29, a Prohibition State convention met at Louisville and selected the following party candidates: For Governor, Josiah Harris; for Lieutenant-Governor H. M. Winslow; for Treasurer, J. M. Holmes; for Auditor, W. W. Goddard; for Attorney-General, E. J. Polk; for Superintendent of Public Instruction, A. B. Jones; for Register of the Land Office, Bradford McGregor; for Clerk of the Court of Appeals, R. S. Friend. The platform contained the following:

Resolved: That the necessity of the times requires a party whose dominant issue in American politics is the principle of legal prohibition of the traffic in intoxicating liquors as a beverage, and all other public wrongs that rest upon the people as the result of partisan, class, and corrupt legislation; such we believe the Prohibition party to be, whose utterances at Indianapolis in convention assembled we approve.

We favor a larger circulating medium in our national currency.

The Republican nominating convention was held at Lexington on May 20. Its nominees were Andrew T. Wood for Governor, Henry E. Huston for Lieutenant-Governor, Eli Farmer for Treasurer, Charles Blanford for Auditor, L. J. Crawford for Attorney-General, L. V. Dodge for Superintendent of Public Instruction, W. J. A. Hardin for Register of the Land Office, and E. R. Blaine for Clerk of the Court of Appeals. The platform contains the following:

The Republicans of Kentucky in convention assembled declare their adherence to the principles of the Republican party as enunciated in the platform of the National Convention of 1888.

They heartily indorse the administration of President Harrison, as pure, wise, and patriotic. They approve the actions of the Fifty-first Congress, and especially what are known as the silver, tariff, and pension bills, and are opposed to the free and unregulated coinage of silver.

We declare that we recommend the adoption of

the new Constitution because it blots from our laws all provisions that authorize human slavery, secures a secret ballot, and provides against fraud and corruption in elections; subjects to regulation by law all public corporations; prohibits the abuse of special legislation, abolishes lotteries, enlarges and protects the Common-school fund, increases the opportunities of popular education, makes more equal the burdens of taxation, better protects the agricultural and laboring interests, and makes provision for its own ready amendment by the people.

We believe the national election laws should be so amended that every American citizen should be allowed to cast a free ballot and have it fairly counted.

A resolution recommending President Harrison for renomination aroused opposition, and was not pressed to a vote.

On the same time, May 20, a fourth ticket was placed in the field by the People's party, a new State organization in sympathy with the Farmers' Alliance. On this ticket were the following names: For Governor, ——— Erwin; for Lieutenant-Governor, S. F. Smith; for Treasurer, I. G. Sallee; for Auditor, W. G. Fulkerson; for Attorney-General, B. L. D. Guffy; for Superintendent of Public Instruction, J. B. Secrest; for Register of the Land Office, T. B. Harreld; for Clerk of the Court of Appeals, W. B. Ogden. The platform of the new party demands

the free and unlimited coinage of silver; declares that no more banks of issue should be organized, and those already chartered discontinued as soon as possible, under the law; opposes alien ownership of lands; favors laws to prevent dealing in futures; opposes all taxation that has for its object the building up of one class or interest at the expense of another class; demands a Bureau of Labor Statistics; that the Government should pay the Union soldier the difference between currency and specie at the time he was paid paper money, with interest added, and that to meet such payment Congress should issue enough Treasury notes, making them full legal tender for all debts, public or private.

On State questions the party demands that

the State tax of fifty cents be taken off mortgages; that fees and salaries of all national, State, and county officers be reduced, allowing only reasonable compensation for services rendered; that the time of assessing property be changed to Jan. 1; that convicts shall be worked inside the walls; that the employment of children under fourteen years of age in factories be prohibited; that all bonds, notes, mortgages, and evidences of debt of \$200 or more shall be presented to the assessor or county court clerk, and be stamped by him at the time that assessments of other property are made, and the failure of such evidences of debt bearing such stamp shall render them void of collection; that the mechanic's lien law be made the same as that of Ohio.

At the August election the entire Democratic ticket was successful. For Governor Brown received 144,168 votes; Wood 116,087; Erwin, 25,631; and Harris, 3,293. The vote for the other candidates did not vary materially from these figures. Members of the State Legislature were elected as follow: Senate, Republicans 10, Democrats 29, People's party 1; House, Republicans 17, Democrats 70, People's party 12.

The new Constitution was adopted by a vote of 213,950 yeas, to 74,446 nays.

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LITERATURE, AMERICAN, IN 1891.

Book production in the "Copyright Year," as it has been called, the International Copyright bill going into effect July 1, 1891, reached 4,665 volumes, about one hundred more than in the preceding year, and was very nearly the same as that of 1886. But new editions and translations are included in this number with the new books. Fiction was, as usual, the most largely represented, and in the higher class of books science was perhaps the poorest. Few notable books were contained in any department except that of biography. It is interesting to note, from the summary given by the "Publishers' Weekly," that the increase in literature and the book trade in the United States during the past decade is not more than five times that of the population, while for the thirteen years preceding 1853 it was precisely double that amount, the increase in the production of books being 800 per cent. and that of the population not 80 per cent. Special lines of study from standard authorities, as in the Chautauqua and Epworth circles, and the growing influence of newspaper and periodical literature, is believed to have much to do with the tendency toward a decrease in the new and original work offered to the public.

Biography.—This is in some respects the fullest and most interesting class of books published during the year. In all, 218 were recorded. Vols. IX and X of "The Writings of George Washington," edited by Worthington C. Ford, brought the work nearer to completion, as did Vol. II of "The Writings and Correspondence of John Jay, First Chief Justice of the United States," the editor of which is Henry P. Johnston. William Wirt Henry began a new biography of his grandfather, in three volumes, in 1890, the second of which appeared in 1891, the title being "Patrick Henry: Life, Correspondence and Speeches," and the material in great measure new. "The Financier and the Finances of the American Revolution," by William Graham Sumner, in two volumes, was the first attempt at a fitting monument to the genius of Robert Morris, to whose financial operations, in the words of a distinguished historian, "Americans owed, and still owe, as much acknowledgment as to the negotiations of Benjamin Franklin or even the arms of Washington." "John Winthrop, First Governor of the Massachusetts Colony," by Joseph Hopkins Twichell, the "Life of Francis Higginson," by his descendant, Thomas Wentworth Higginson, "Cotton Mather," by Barrett Wendell, "Thomas Hooker," by George Leon Walker, and the "Life of General Houston," the gallant Texan Governor, by Henry Bruce, all belong to the series of "Makers of America," while "The Life and Times of John Dickinson, 1732-1808," by C. J. Stillé, was an important contribution. Vols. I, II, and V of "Chronicles of the Builders of the Commonwealth," historical character studies by Hubert Howe Bancroft, appeared somewhat irregularly in order but full of inter-

est and instruction, as was also the volume of "Literary Industries," which tells the story of the great work of the "History of the Pacific States." One of the most important and timely books of the year was Justin Winsor's "Christopher Columbus, and how he Received and Imparted the Spirit of Discovery." "Biographical Sketches of the Delegates from Georgia to the Continental Congress" were made by Charles C. Jones, Jr., and Louis Henry Boutell printed privately an essay on "Alexander Hamilton, the Constructive Statesman." In the series of "American Statesmen" "Lewis Cass" was from the pen of Andrew C. McLaughlin. "General Andrew Jackson, Hero of New Orleans and Seventh President of the United States," was the subject of a volume by Oliver Dyer, while the "Journal of William Maclay, United States Senator from Pennsylvania, 1789-1791," was published for the first time, edited by Edgar S. Maclay. It is esteemed of the highest value as giving insight into the early workings of Congress. "Governor William Smith of Virginia" was a memorial volume by J. W. Bell. "Recollections of President Lincoln and his Administration," by Hon. Lucius E. Chittenden, is a work of the Register of the Treasury during the exciting period of the war, and from Carl Schurz came an essay on "Abraham Lincoln." Charles Wallace French also treated "Abraham Lincoln, the Liberator," in the Series of "American Reformers." "The Life and Letters of Gen. Thomas J. Jackson (Stonewall Jackson)," by his wife, Mary Anna Jackson, had an introduction by the Rev. Henry M. Field. "Midshipman Paulding," in the "Young Heroes of our Navy" series, was by Molly Elliot Seawell, and from Major John G. Bourke we have a stirring volume, "On the Border with Crook." Eugene Coleman Savidge, M. D., wrote the "Life of Benjamin Harris Brewster." In the "American Reformers" series we have "Frederick Douglass: the Colored Orator," by Frederic May Holland; "William Lloyd Garrison, the Abolitionist," by Archibald H. Grimké; and "Dr. S. G. Howe, the Philanthropist," by F. B. Sanborn; while somewhat in line with the same are a second series of "Speeches, Lectures, and Letters," by Wendell Phillips, and "The Biography of Dio Lewis, A. M., M. D.," prepared, at the desire and with the co-operation of his wife, by Mary F. Eastman. "The Biography of Ephraim McDowell, M. D., 'The Father of Abdominal Surgery,'" was written by Mary Young Ridenbaugh. The "Autobiography, Diary, and Correspondence of James Freeman Clarke" was edited by Edward Everett Hale, and a library edition was made of the "Life and Works of Horace Mann," by his wife, in five volumes. Frances Anne Kemble added "Further Records, 1848-1883," to those of her girlhood and later life, already given to the world, and Elizabeth Stuart Phelps (Mrs. Herbert D. Ward) contributed a memoir of her father, "Austin Phelps." "Recollections and Impressions, 1822-1890," by Octavius Brooks

Frothingham, was odd but entertaining, and "Anne Bradstreet and her Time," by Helen Campbell, tells the story of the first American woman writer. In the "Evolution Series," Prof. Edward D. Cope supplied a short sketch of "Alfred Russel Wallace," "Phillips Brooks, Bishop of Massachusetts," was a biography by Newell Dunbar; "William Pinkney, Fifth Bishop of Maryland," a review by Rev. Hall Harrison of Dr. Hutton's recent biography of the bishop; "Life and Letters of Joseph Hardy Neesima," by Arthur Sherburne Hardy, told the story of the first Japanese evangelist educated in our country; "Memorabilia of George Cheever, D. D.," was of special interest to old New Yorkers; "Days of my Years," by Joseph Cross, D. D., "The Field and the Fruit," a memorial of a twenty-five years' ministry, by James H. Tuttle, D. D., and "Reminiscences of a Long Life," by J. M. Pendleton, are autobiographical. "Truman Marcellus Post, D. D.," by his son, T. A. Post, gives the record of one of the early abolitionists; from Rev. Walter Elliott we have "The Life of Father Hecker"; from Wilton Tournier "The Cross of Iron," a sketch of the life and work of Father Field; from Rev. John Lobb a "Life of Rev. T. De Witt Talmage, D. D.," and from John R. Howard a study of "Henry Ward Beecher" in his entire personality. In the series of "American Religious Leaders" appeared "Charles Grandison Finney," by Dr. G. F. Wright, and "Francis Wayland" by James O. Murray. "Poliuto" (Franc B. Wilkie) supplied "Personal Reminiscences of Thirty-five Years of Journalism"; "Robert Carter, his Life and Work, 1807-1889" was from the pen of the daughter of the well-known publisher; William Brotherhead described "Forty Years among the Old Booksellers of Philadelphia." "Life and Labors of Henry W. Grady, his Speeches, Writings, etc.," were published in Atlanta, Ga. "A Score of Famous Composers," by Nathan Haskell Dole, "The Story of a Musical Life," by George F. Root, "My Three Score Years and Ten: An Autobiography" of the sculptor Thomas Ball, and "The Life and Professional Career of Emma Abbott," by Mrs. S. E. Martin, belong to biography of artists; while "The Salem Seer," by George C. Bartlett, was the title given to reminiscences of Charles H. Foster. "In Memory of Elizabeth Haven Appleton" a selection was printed from her lectures, and Mrs. J. Davis published "In Memoriam: Lucy Webb Hayes." "Thirty Days with President Harrison" contained all his speeches during his vacation trip through the country during the year, and a second series of "Captains of Industry" was written for young Americans by James Parton. "Success and its Achievers" formed the theme of William M. Thayer; "The Women of the French Salons" by Amelia Gere Mason, was a sumptuous volume on an attractive theme; J. L. M. Curry, ex-United States minister to the court of Spain, wrote on "William Ewart Gladstone" from personal acquaintance; and Harold Frederic made a study of character development on a throne in his "Young Emperor William II of Germany." "Famous English Statesmen of Queen Victoria's Reign," eight in all, were treated by Mrs. Sarah K. Bolton in her usual felicitous style; while "Unhappy Loves of Men of Genius" were de-

plored by Thomas Hitchcock. "The Life and Times of Kateri Tekakwitha, the Lily of the Mohawks, 1656-1680," were described by Ellen H. Walworth; and "Service in the King's Guards by Two of Them," is a narrative of missionary work on the Western frontier which includes studies of Indian life. "The Goodwins of Hartford, Conn., Descendants of William and Ozias Goodwin," was a compilation by James Junius Goodwin. Of special interest was "The Life of Christopher Columbus," translated by Henry F. Brownson from the Italian of Francesco Tarducci. "Canadians in the Imperial, Naval, and Military Service Abroad," were chronicled by J. Hampden Burnham. "Eli Perkins's Thirty Years of Witty, Wise, and Eloquent Men," by Melville D. Landon, contains the experiences of that humorist, and tells many bright stories.

Criticism and General Literature.—In this department some excellent work was done. "Latest Literary Essays and Addresses" of James Russell Lowell saw the light in the year which closed the poet's career; from William Dean Howells we had hints on "Criticism and Fiction" (selected from the Editor's Study of Harper's Magazine); from Theodore Child, "Art and Criticism," monographs and studies; from Agnes Repplier, "Points of View"; from Charles Dudley Warner, "As we were saying," twenty or more delightful essays; from William Wetmore Story, "Excursions in Art and Letters," charming as usual; from Thomas Wentworth Higginson, "The New World and the New Book," a series of literary papers; and George William Curtis was heard from in "From the Easy Chair." The first series of "Studies, Literary and Social," by Richard Malcolm Johnston, was issued, while an address delivered by Col. Robert G. Ingersoll as a testimonial to Walt Whitman, Oct. 21, 1890, made a plea for "Liberty in Literature." "A Study of Genius" was made by N. K. Royce, and "Forensic Eloquence" was the theme of John Goss. "Beginnings of Literary Culture in the Ohio Valley" were traced by W. H. Venable, and J. Walker Fewkes edited Vol. I. of "A Journal of American Ethnology and Archaeology." The native tribes of North and South America were linguistically classified and ethnographically described by Daniel G. Brinton, M. D., in "The American Race"; and "Emblematic Mounds and Animal Effigies," by Stephen D. Peet, formed Vol. II of the "Antiquarian Library, Prehistoric America." Maj. John G. Bourke, U. S. A., wrote on "Scotologic Rites of all Nations." "The History of Modern Civilization," a hand-book based upon G. Ducoudray's "*Histoire Sommaire de la Civilization*," while a continuation and completion of "The History of Ancient Civilization" is rather an adaptation than a translation. Ellen M. Mitchell made "A Study of Greek Philosophy," while "Studies of the Gods in Greece" was the title given by Louis Dyer to eight lectures delivered in 1890 at the Lowell Institute. Philip Schaff, D. D., treated "The Renaissance" under the most favorable conditions. Nature was charmingly described in "Sharp Eyes: a Rambler's Calendar of Fifty-two Weeks among Insects, Birds, and Flowers," kept by William Hamilton Gibson; in "Short

Cuts and By-paths," by Horace Lunt; in "Under the Trees and Elsewhere," by Hamilton Wright Mabie; in *Bird-dom*," by Leander S. Keyser; and in "Arcadian Days," actually written out of doors by William Howe Downes, and devoted to American landscapes in nature and art. "Gray Days and Gold," by William Winter, wove thought and fancy into twenty-four essays and thirteen poems on rambles in the British Isles, and Laurence Hutton traced "Literary Landmarks of Edinburgh." "The Sabbath in Puritan New England" was handled in an interesting and at times racy manner by Mrs. Alice Morse Earle, and Mrs. Caroline E. Upham presented "Salem Witchcraft in Outline." Rev. W. H. Myers gave a series of lectures on "The Nineteenth Century Young Man," and C. C. Everett wrote "Ethics for Young People." George Sumner Weaver, D. D., was "Looking forward for Young Men," while Annie Nathan Meyer edited "Woman's Work in America," with an introduction by Julia Ward Howe. "The Woman's Club" was a practical guide and hand-book prepared by Olive Thorne Miller, and Rose Porter compiled "Women's Thoughts for Women." Eliza Chester held "Chats with Girls on Self-culture"; Eleanor A. Hunter, "Talks to Girls"; Annie H. Ryder bade "Go right on, Girls"; and William H. Black, D. D., wrote on "Womanhood." "The New Womanhood," vigorously studied by James C. Fernald, had an introduction by Marion Harland. "The Stage History of Famous Plays" was traced by Henry P. Phelps, giving Hamlet from the actor's standpoint, its representatives, and a comparison of their performances; William D. O'Connor reviewed "Mr. Donnelly's Reviewers," while "The Mortal Moon; or Bacon and his Masks," by J. E. Roe, ascribed not only Shakespeare's works, but the entire literature of his age, to Lord Verulam. George Willis Cooke gave us "A Guide to the Poetic and Dramatic Works of Robert Browning"; "A Few Words on Robert Browning" were said anonymously; "Petrarch: a Sketch of his Life and Works," is to be attributed to May Alden Ward, while the translation in prose of the two first parts of "The Divine Comedy of Dante Alighieri," by Prof. Charles Eliot Norton, is unique, and one of the finest literary productions in years. A book of much interest to Dante scholars is a translation of "Eleven Letters of Dante," by Charles S. Latham; and the completion of Prof. Geo. H. Palmer's translation of Homer's "Odyssey" in rhythmic prose is worthy of special note. G. Bernard Shaw extracted "The Quintessence of Ibsenism," and Charles Morris devoted three volumes to "King Arthur and the Knights of the Round Table." "A Study in Corneille" was made by Lee Davis Lodge. "Sparks from a Backlog," by Nathan Green, was a collection of short, detached miscellanies; Sarah Ball Kitchen suggested "Thoughts on Life" in the form of helpful aphorisms; and "The Professor's Letters," by Theophilus Parsons, written many years ago to a young girl, and now published, are concerned largely with the doctrines of Swedenborg. Louis F. Day laid down "Some Principles of Every-day Life," and Henry C. Trumbull eulogized "Friendship, the Master Passion." "George Washington's Rules of Civility" were traced to their sources

and restored by Moncure D. Conway. Vol. II of "Hermetic Philosophy" appeared, and Prof. Morris Jastrow translated "A Fragment of the Babylonian 'Dibarra' Epic." Greenough White was responsible for a "Sketch of the Philosophy of American Literature," Charles F. Richardson directed "The Choice of Books," and a popular edition was also made of his work on "American Literature, 1607-1885," comprising both volumes under one binding. Other works of value are "Short Studies in Literature," by Hamilton Wright Mabie; "English Versification for the Use of Students," by Rev. James C. Parsons; "The Compounding of English Words," by F. Horace Teall; "English Words," an elementary study of derivations, by Charles F. Johnson; "English Composition," eight lectures given at Lowell Institute by Barrett Wendell; "The World's Literature," by Mary E. Burt, a course in English, in four parts; "From Chaucer to Tennyson: English Literature in Eight Chapters," by Henry A. Beers (from the Chautauqua Press); "English Authors," by Miss Millie Rutherford; "The Study Class," a guide for the student of English Literature, by Anna B. McMahon; "American Literature: an Elementary Text-book for Use in High Schools and Academies," by Julian Hawthorne and Leonard Lemmon; "Lamb's Essays: a Biographical Study," selected and annotated by Elizabeth D. Hanscom; "Notes on English Literature," by F. Parker Emery; "Poetic and Verse Criticism of the Reign of Elizabeth," by Felix E. Schelling (in the University of Pennsylvania series in Philology, Literature, and Archæology). "The Story of the Odyssey" was told by E. Brooks, as were "Children's Stories in English Literature" by Henrietta C. Wright. "Child Classics" were compiled by Mary R. Fitch. A new Riverside edition in thirteen volumes was published of "The Writings of Oliver Wendell Holmes." An invaluable work accomplished by John Foster Kirk was "A Supplement to Allibone's Critical Dictionary of English Literature and British and American Authors," in two volumes, containing over 37,000 articles (authors) and enumerating over 93,000 titles; while "The American Slang Dictionary," by James Maitland, in a limited edition of 250 copies, embodied all American and English slang phrases in current use, with their derivation and philology. J. Devoe Belton's "Literary Manual of Foreign Quotations" found a place also, as did Rev. Tryon Edwards's "Dictionary of Thoughts."

Dictionaries.—See special article on page 249 of this volume.

Educational.—Treating the subject of education from a general point of view, we have "The Teacher as he should be," an address delivered by C. W. Bardeen before the New York Teachers' Association, July 8, 1891, and, with slight changes, July 21, 1891, before the Chautauqua Assembly; "Organization and System vs. Originality and Individuality on the Part of Teacher and Pupil," a paper read before the National Educational Association at St. Paul, by Henry Sabin, and "Inspirations of the School-teacher," by Eva H. Walker. C. A. Barry asked "What shall we do with our Children?" and T. G. Rooper published a monograph, "Apperception,

or the Essential Mental Operation in the Act of Learning." In the "Educational Monographs" Henry M. Leipziger presented "The Education of the Jews"; and "Prussian Schools through American Eyes" was a report to the New York State Department of Public Instruction by James Russell Parsons, Jr. "Higher Education in Indiana," by James Albert Woodburn, formed No. 10 of "United States Bureau of Education Circulars of Information," and in the "Johns Hopkins University Studies" we have "The History of University Education in Maryland," by Bernard C. Steiner, also "The Johns Hopkins University, 1876-1891," by President Daniel G. Gilman, with supplementary notes on "University Extension and the University of the Future," by R. G. Moulton, of Cambridge, Eng., University. "Cornell University, her General and Technical Courses," was the theme of Frank C. Perkins, and of individual interest are "St. Mary's Seminary of St. Sulpice" (Baltimore, Md.), a memorial volume of the centenary of the institution, and "Memorials of St. Paul's School," by Joseph H. Coit, D. D. Vol. I appeared of "A History of Dartmouth College," edited by John K. Lord. "The Great Conspiracy against our American Public Schools," by Rev. R. Harcourt, has an introduction by Bishop C. H. Fowler, and is illustrated by Thomas Nast and others; the "Effect of the College Preparatory High School upon Attendance and Scholarship in the Lower Grades" was considered by C. W. Bardeen, who also delivered an address, July 2, 1891, on "The Tax Payer and the Township System," and Elizabeth Harrison made "A Study of Child Nature from the Kindergarten Standpoint." "The Relation of the Kindergarten to the Public School" was discussed by Mrs. Kate Douglas Wiggin, the popular author for children, and Martha S. Hussey proffered "Helps in Teaching Reading," "Conduct as a Fine Art," including "Laws of Daily Conduct," by N. P. Gilman, and "Character Building," by Edward P. Jackson, in one or separate covers, is commended to every teacher by Hon. W. T. Harris, United States Commissioner of Education; and George M. Steele, D. D., also prepared a text-book of "Rudimentary Ethics" for high schools and academies. "Duty" was a book for schools by Julius H. Seelye. "Literature in the Public Schools" formed the theme of F. L. Pattee, and Caroline F. Cutler devoted a volume to "Primary Manual Training." Books containing instruction and suggestions to teachers under the guise partially of fiction are "Evenings at School," by Clara Marshall, and "Buckeye-Hawkeye, Schoolmaster, or the Life of Carl Mackenzie, dedicated to the School-teachers of America by One of the Teachers." In "Appletons' Science Text-books" was issued "Appletons' School Physics, embracing the Results of the Most Recent Researches in the Several Departments of Natural Philosophy," by John D. Quackenbos, Alfred M. Mayer, Francis E. Nipher, and others. Charles F. King published Vol. II of "The Picturesque Geographical Readers," and Jacques W. Redway wrote on "The Reproduction of Geographical Forms." John N. Tilden, M. D., prepared "A Commercial Geography for Academies, High Schools, and Business Colleges," and Wilbur S. Jackman took up the subject of "Nature Study

for the Common Schools." Among school-books may be mentioned a "Grammar of the English Sentence, and Introduction to Composition," by Jonathan Rigdon; "A Briefer Practical Rhetoric," by J. Scott Clark; "Practical Language Exercises," by Mara L. Pratt; "A Brief French Grammar," by William Dwight Whitney; "Lessons in Industrial Drawing," by Mary Isabel Gilmore; and, in "Appletons' Standard Arithmetics," "First Lessons in Arithmetic," by Andrew J. Rickoff.

Fiction.—As no novel among the 1,105 works of fiction published in 1891 attained especial prominence, "Khaled, a Tale of Arabia," by F. Marion Crawford, may be placed at the head of the list, being characterized by all the subtle charm that distinguishes that author, who also contributed "The Witch of Prague." Julien Gordon (Mrs. Van Rensselaer Cruger) wrote "A Puritan Pagan," "Vampires," and "Mademoiselle Réséda" (the last two stories being contained in one cover), and Frank R. Stockton delighted his admirers with "The Squirrel Inn," "The House of Martha," "a novel of delightful incongruities," and also took "The Rudder Grangers Abroad" in a volume containing other stories in addition. "Mea Culpa" was a powerful but tragic effort of Sidney Luska (Henry Harland); Edward Eggleston depicted "The Faith Doctor" in a story of New York, ridiculing the tenets of his disciples; and, in collaboration with Dolores Marbourg, George Cary Eggleston produced "Juggernaut," a veiled record, from which it would have been as well if the veil had never been withdrawn. "She loved a Sailor" and "A Rose of a Hundred Leaves: a Love Story," "A Sister of Esau" and "The Beads of Tasmer," emanated from the prolific pen of Mrs. Amelia E. Barr. "In the 'Stranger People's' Country," by Charles Egbert Craddock (Miss Mary N. Murfree) deals with the prehistoric inhabitants of her native State, and from her sister, Miss Fanny N. D. Murfree, came a novel, "Felicia," treating largely of the stage, which aroused considerable comment. F. Hopkinson Smith's first novel, "Colonel Carter, of Cartersville," portrayed the Virginia gentleman of the old school, while the latest from Amélie Rives (Mrs. John Armstrong Chanler) was entitled "According to St. John," giving a startling interpretation to familiar words. "The Mammon of Unrighteousness," by Hjalmar H. Boyesen, deals with the leading foible of American life thrown strikingly into relief; "Murvale Eastman, Christian Socialist," and "A Son of Old Harry" (the last a story of heredity), belong of right to Albion W. Tourgée; while "An Imperative Duty," by William Dean Howells, pleased some and shocked others by its treatment of the race question. "Jerry," which at first appeared anonymously, but before the close of the year was owned by Sarah Barnwell Elliott, handles momentous questions ably, if with crudity, while "Dally," by Maria Louise Pool, describes the gradual civilization of a little North Carolina savage. "Ciphers," by Mrs. Ellen Olney Kirk, proves that the charming author of "The Story of Margaret Kent" has lost none of her power. Another favorite, Captain Charles King, published "Captain Blake," "Two Soldiers," and "Dunraven Ranch" in one volume, and "The

Trials of a Staff Officer"; he also edited "By Land and Sea," a collection of stories by army and naval officers. In "A Suppho of Green Springs and other Stories" Bret Harte is again at his best, while an entirely new departure was made by Stanton Page (Henry B. Fuller) in "The Chevalier of Pensièri-Vani." Another novel of Italy was "An Utter Failure," by Mrs. Miriam Cole Harris, the author of the familiar "Rattledge." Stories of marked local coloring are "A Pagan of the Alleghanies" and "Told in the Hills" (of Montana), by Marah Ellis Ryan; "On Newfound River," by Thomas Nelson Page; "Old Abraham Jackson and his Family: an Episode in the Evolution of Nebraska Dug-outs," by Anson Uriel Hancock; "Otto, the Knight, and other Trans-Mississippi Stories," by Octave Thanet (Alice French); "From Timber to Town Down in Egypt," by an early settler who prefers to remain nameless; "Down the O-hi-o" in antebellum days, by Charles H. Roberts; "The Impress of a Gentlewoman," by Fannie E. Newberry; "The Puritan's Daughter" (sequel to "Creole and Puritan"), a character romance of two sections, by T. C. De Leon; "Tom and Joe, Two Farmer Boys in Love and War and Peace: a Louisiana Memory," by Clarence B. Collins; "Flute and Violin, and other Kentucky Tales and Romances," by James Lane Allen; "The Primes and their Neighbors: Ten Tales of Middle Georgia," by Richard Malcolm Johnston; "An Indiana Man," by Le Roy Armstrong; "Pine Valley," the story of a Western mining region, by L. B. France; "In the High Valley," by Susan Coolidge (Sarah C. Woolsey); "In Biscayne Bay," by Caroline W. Rockwood; George Fox Tucker's literal transcript of "A Quaker Home"; "Ringing Bells," by Reese Rockwell; "Jolly Good Times at Hackmatack," by Mary P. Wells Smith; "A New England Nun and other Stories," by Mary E. Wilkins; and "Huckleberries gathered from New England Hills," by Rose Terry Cooke; while "A New York Family," by Edgar Fawcett, presents an unattractive picture. Mexico was the scene of "The Yellow Snake," by William Henry Bishop. "Columbia: a Story of the Discovery of America," by John R. Musick, opens a series of twelve historical novels to embrace the leading events of American history. "A Woman of Shawmut," by Edmund Janes Carpenter, was a capital romance of colonial times, and "Betty Alden, the First-born Daughter of the Pilgrims," followed in the series of romances of the old Plymouth Colony, of which Mrs. Jane G. Austin has already sent out three. Another of Mrs. Mary Hartwell Catherwood's tales of Acadia was "The Lady of Fort St. John," while "From Colony to Commonwealth," by Nina Morre Tiffany, was a collection of stories of the Revolutionary days in Boston. "In Old Quinnebasset" belonged to the same period, and had Washington for the central figure; it was by Sophie May (R. S. Clarke); while "The Lost Colony," by James F. Raymond, "Yankee Doodle Dixie," by John Vincent Ryals, the "Adventures of a Fair Rebel," Matt Crim's first novel, are essentially Southern in tone. Stories of the war are "The Iron Game," by Henry F. Keenan; "Reunited," by a popular but anonymous Southern author; "Love and Rebellion," by Martha Caroline Keller, which includes re-

construction also; "The Captain of Company K," by Joseph Kirkland, the author of "Zury," a strikingly realistic tale; and "Huldah Brent's Will," by Mrs. S. S. Robbins.

"Monk and Knight: an Historical Study in Fiction," in two volumes, by Rev. Frank W. Gunsaulus, is intended rather for the student of history than the average novel reader; "A King of Tyre," by James M. Ludlow, carries us back to the times of Ezra and Nehemiah; "Aleph the Chaldean," by Dr. E. F. Burr, was religious also in character; from Alice K. Cooley we have "Asaph," an historical romance, and from Harriet Prescott Spofford "Azarian: an Episode," "Dr. Huguet," by Edmund Boissgilbert, M. D. (Ignatius Donnelly), has the race problem at the South for its motive, and deals largely with the supernatural; "Dr. Lamar," by an unknown author, deliberates the question of ending suffering or useless lives; "A. D. 2050" described the electrical development of Atlantis by a former resident of the "Hub," and belongs to the type of novel inaugurated by Edward Bellamy, another of which is "A. D. 2000," by Alvarado M. Fuller. "The Crystal Button," by Chauncey Thomas, details adventures in the forty-ninth century, while Milton W. Ramsey contemplated "Six Thousand Years hence." "The Enchanted," by John Bell Bouton, "Atmân," by Francis Howard Williams, "Beyond the Bourn," by Amos K. Fiske, "The Hidden City," by Walter H. McDougall, "Zanthon," by James Doran, and "Prisons of Air," by Moncure D. Conway, deal with the obscure and improbable, while books that grapple with the problems of actual daily life, its struggles and necessities, are "Masters and Men," by Eugene J. Hall; "Which Wins? a Story of Social Conditions," by Mrs. Mary H. Ford; "Moïna, or against the Mighty," dealing with socialism, by Lawrence L. Lynch; "A Tramp in Society," by Robert H. Cowdrey; and "The Rice Mills of Port Mystery," by B. F. Heuston. "His Cousin the Doctor" was directed against Christian science by Minnie Willis Baines, and "Rabbi and Priest," by Milton Goldsmith, is founded on facts of Russian persecution of Jews. "Senator Lars Erikson" was a story of love and politics by Franklin W. Lee, while how "The Bachelor's Club" was finally dissolved was told by I. Zangwill. "St. Martin's Summer," by Rose Porter, "The Romance of a Spanish Nun," by Alice M. Baldy, "Phyllida," by Maude Howe, "The Sardonyx Seal," by Belle Gray Taylor, "Marguerite," by Mrs. Mary J. Holmes, "Mostly Marjorie Day," by Virginia F. Townsend, "Sweet and Twenty," by Mary F. Sanborn, "The Story of Two Lives," by Stuart Sterne (Gertrude Bloede), "If she Will, she Will," by Mary A. Denison, "An Exceptional Case," by Itti Kinney-Réno, "One Woman's Way," by Edmund Pendleton, "No Saint," by Anne Bozeman Lyon, "The Heirs of Bradley House," by Amanda M. Douglas, "Diana Fontaine," by Algernon Ridgeway, "Di," by Squier L. Pierce, "The Man with a Thumb," by W. C. Hudson, "The Lady of Cawnpore," by Frank Vincent and Albert E. Lancaster, "The Adventures of Three Worthies," by Clinton Ross, "A Manless World," by Agnes Bond Yourell, "Cross Roads," by Mary Holloway, and "John Winthrop's Defeat," by John K. Ludlum, found

readers and were excellent of their kind. "A Nameless Novel," by M. G. McClelland, opened "The Nameless Series"; "In Office," a story of department life in Washington, by Louis Vital Bogy, "Back to Life," by T. W. Speight, "Two Men of the World," by Harriet True Bates, "Her Playthings, Men," by Mabel E. Cahill, and "A God of Gotham," by Lee Bascom, are all of the sensational type; while "Lost in Samoa," by E. S. Ellis, and "The Spanish Galcon," by Charles Sumner Seeley, with "The Braganza Diamonds," by James Otis Kaler, treat of the adventurous. Healthy, wholesome books are "Out at Twinnett's," "The Chautauquans," and "Country Luck," all three by the familiar author of "Helen's Babies"; "In the Cheering-up Business," by Mary Catherine Lee; "Adopting an Abandoned Farm," by Kate Sanborn; "Farming," by Richard Kendall Munkittrick; "Around Bronton," by Mrs. Mary R. Baldwin; "In One Girl's Experience," by Mary H. Howell; "An Entire Stranger," by Rev. T. L. Baily; "A Modern Exodus," by Faye Huntington; "Christie's Home-making," by Minnie E. Kenney; and "Thrown on her own Resources," by Mrs. Jennie E. Croly (Jennie June), which tells what girls can do under similar circumstances. "A Fisherman's Daughter" was written for the Order of King's Daughters by Jenny Harrison.

Short stories were numerous, and we have several excellent volumes, among which may be mentioned "Balaam and his Master," by Uncle Remus (Joel Chandler Harris); "Zadoc Pine and other Stories," by H. C. Bunner; "With my Friends," tales told in collaboration, but written out by James Brander Matthews; "The Chase of the Meteor and other Stories," by Edwin Lassetter Bynner, the author of "The Begum's Daughter"; "Gallegher and other Stories," by Richard Harding Davis, who published also "Stories for Boys"; "Main-traveled Roads: Six Mississippi Valley Stories," by Hamlin Garland; "Three Tales," by William Douglas O'Connor; "Elsket and other Stories," by Thomas Nelson Page; "Holiday Stories," by Stephen Fiske; "The Johnstown Stage," by Robert Howe Fletcher; "Maid Marian and other Stories," by Molly Elliot Seawell; "Iduna and other Stories," by George A. Hibbard; "Fourteen to One," by Elizabeth Stuart Phelps; "A Violin Obligato and other Stories," by Margaret Crosby; "A Book o' Nine Tales," by Arlo Bates; "Stories of the Land of Evangeline," by Grace Dean McLeod; "The Will and the Way Stories," by Mrs. Jessie Benton Frémont; two volumes by Thomas A. Janvier, "The Uncle of an Angel and other Stories" and "Stories of Old New Spain"; Juliana Horatio Ewing's "Last Words"; "The Old Stone House and other Stories," by Anna Katharine Green (Mrs. Rohlf); "A New Mexico David and other Stories and Sketches of the Southwest," by Charles F. Lummis; and "A Woman's Talent and other Stories," by Julia M. Hunt. "Eleven Possible Cases" were proposed by Frank R. Stockton, Joaquin Miller, and several other brilliant authors, who combined to make an entertaining book. "Twenty Good Stories" were told by Opie P. Read, the Arkansas Traveler.

Juvenile Books.—The quality as well as the number of this class of books increases year by

year. Many are read and enjoyed by older people, and among the best of 1891 are: "The Modern Aladdin" and "Men of Iron," by Howard Pyle; "The Abandoned Claim," by Mrs. Flora Haines Loughead, who also opened a new series, to be issued monthly, with "The Man from Nowhere"; "Frü Dagmar's Son," by Julia McNair Wright; "Ryle's Open Gate," by Mrs. Susan T. Moore; "We All," by Octave Thanet (Miss Alice French); "The Scarlet Tanager and other Bipedes," by J. T. Trowbridge; "Four and Five: a Story of a Lend-a-Hand Club," by Edward Everett Hale; Kirk Munroe's "Prince Dusty: a Story of the Oil Regions" and "Campmates: a Story of the Plains"; Oliver Optic's (W. T. Adams) "Stand by the Union" and "A Missing Million"; "Among the Camps: Young People's Stories of the War," by Thomas Nelson Page; "Through Forest and Fire," by E. S. Ellis; "The New Senior at Andover," by Herbert D. Ward, partly autobiographical; "John Auburn-top, Novelist: his Development in the Atmosphere of a Fresh-water College," by Anson Uriel Hancock; "How I became a Sailor" and other sketches by Omer T. Gillett, M. D.; "The Boy Settlers," a story of early times in Kansas, by Noah Brooks; "Our Clerk from Barkton," by Rev. E. A. Rand; "The Boyhood of John Kent," by Willis Boyd Allen; "The Jo-Boat Boys," by Rev. J. F. Cowan; "The Little Corporal" and its companion volume, "The Colonel's Charge," war stories, by Carlisle B. Holding; "Master William Mitten," by A. B. Longstreet, D. D.; "Percy Wynn," by Francis J. Finn; "Gid Granger" and "Little Smoke: a Tale of the Sioux," by William O. Stoddard; "Wynema: a Child of the Forest," another Indian tale by S. Alice Callahan; "The Boy Convict of Bermuda," by Margaret Winslow; "Old Rough, the Miser," by Lily F. Wesselhoeft; "A Queer Family," by Effie W. Merriman; "Extraordinary Experiences of Little Captain Doppelkop on the Shores of Bubbleland," described by Ingersoll Lockwood and illustrated by Clifton Johnson; "Betty, a Butterfly," by A. G. Plympton, the author of "Dear Daughter Dorothy"; "Lady Jane," a story of child life in New Orleans, by Mrs. C. V. Jamison; and "Witch Winnie's Mystery," by Mrs. Elizabeth W. Champney. Pansy (Mrs. Isabella M. Alden) wrote "Helen the Historian" and "Miss Dee Dunmore Bryant"; Mary E. Bamford, "Eleanor and I: a Tale of the Days of King Richard II," "Number One or Number Two," and "Janet and her Father"; and Mrs. H. Dorsey, "Tomboys" and "Two Ways," two stories in one volume. John Kendrick Bangs was responsible for "Tiddleywink Tales."

"A Descriptive List of Romantic Novels" and "A Descriptive List of International Novels" were compiled by William M. Griswold.

Fine Arts.—The decline in the character of art books was even more marked this year. From Josephine L. Abbott we have "Outlines for the Study of Art in its Three Main Divisions: Architecture, Sculpture, Painting"; and from F. N. Scott, "Æsthetics, its Problems and Literature"; George O. Seilhamer's "History of the American Theatre, New Foundations," carries on the work (of which three volumes have now appeared), and covers the period 1792-1797. Ellen Russell Emerson wrote on "Masks, Heads,

and Faces, with Some Considerations respecting the Rise and Development of Art"; and E. E. Warman on "Gestures and Attitudes," giving a practical exposition of the teachings of Delsarte. Mrs. J. W. Shoemaker prepared "Delsartean Pantomimes," "Mexican Painting and Painters," by Robert H. Lamborn, gave a brief sketch of the development of the Spanish school of painting in Mexico; while "Colonial Furniture of New England" was "A Study of the Domestic Furniture in Use in the Seventeenth and Eighteenth Centuries," by Irving Whitall Lyon, M. D. "A Message to China Decorators" was delivered by Mrs. C. Goodyear. Helen M. Sparmann made "An Attempt at an Analysis of Music"; "Preludes and Studies: Musical Themes of the Day," were treated by W. J. Henderson; and "The Theory of Music as applied to the Teachings and Practice of Voice and Instrument in the New England Conservatory," by Louis C. Elson. "The Study of Vocal Physiology" was recommended by Otto T. Simon. "How shall I practice?" by Julie Rosewald, contained practical suggestions to students of vocal music, and Henry E. Krebhiel made "Studies in the Wagnerian Drama." "Landscape Gardening," by Samuel Parsons, Jr., Superintendent of Parks of New York city, is a work as valuable as handsome. S. R. Koehler compiled a "Catalogue of the Engraved and Lithographed Work of John Cheney and Seth Wells Cheney," and from Leon Barritt we have "Engravings: how to estimate their Cost." Among gift books are to be mentioned "Scenic Utah, Pen and Pencil," by Alfred Lambourne; "Leaves from an Artist's Field-book," by Wedworth Wadsworth; "Ideals of Beauty," fac-similes of new paintings in water colors by Maud Humphrey, with poems by various poets, illustrated by Joseph M. Gleeson and other artists; "Yvernelle: a Legend of Feudal France," illustrated by J. J. Bissegger, John J. Boyle, F. S. Church, and others; "Our Amateur Circus, The Greatest Show on Earth: Society," by H. W. McVickar; "Where Meadows meet the Sea," sea songs and pastoral lays, edited by H. S. Morris, and illustrated by F. F. English; "Favorite Water-colors," fac-similes of favorite works, by Francis Day, Charles Howard Johnson, H. W. McVickar, and others; "Through Woodland and Meadow and other Poems, with Sketches from Nature," by Marie Low and Maud West. Fine editions were issued of "Ben Hur," by Gen. Lew Wallace, with over one thousand marginal drawings; of William Dean Howells's "Venetian Life"; of Washington Irving's "Alhambra" and "Sketch-Book," and of Mrs. Stowe's "Uncle Tom's Cabin." "Elizabethan Songs" and Whittier's "Snow-Bound" were illustrated by Edmund H. Garrett, and Holmes's "One-Hoss Shay" by Howard Pyle.

General Science.—But 97 works of this class were published during the year. H. W. Conn wrote "The Living World, whence it came and whither it is drifting"; Hubbard Winslow Mitchell, M.D., on "The Evolution of Life, or Causes of Changes in Animal Form, a Study in Biology"; N. S. Shaler, on "Nature and Man in America"; "Caucasian," an "Anthropology for the People," a refutation of the theory for the Adamic origin of all races; and Thomas H. Musick, "The Genesis of Nature con-

sidered in the Light of Spencer's Philosophy, as based upon the Persistence of Energy"; while in special departments, Montagu Chamberlain supplied "A Popular Hand-book of the Ornithology of the United States and Canada," based on Nuttall's Manual, in two volumes; John B. Grant, "Our Common Birds and how to know them," giving 99 varieties of the Northern States; N. S. Goss, a "History of the Birds in Kansas"; Charles J. Maynard, "A Manual of North American Butterflies"; Charles S. Newhall, "The Leaf Collector's Hand-book and Herbarium"; and Charles Sprague Sargent, Vol. II of "The Silva of North America. Typical Elms and other Trees of Massachusetts," by Lorin L. Dame, had an introductory chapter by Oliver Wendell Holmes, and Fanny D. Bergen caught "Glimpses at the Plant World." "Nature's Wonder Workers," by Kate R. Lovell, consisted of short life histories in the insect world; Alpheus Hyatt and J. M. Arms described "Insecta"; W. K. Brooks, "The Oyster" (a popular summary of a scientific study); William T. Hornaday, for eight years Chief Taxidermist of the United States National Museum at Washington, published a volume on "Taxidermy and Zoological Collecting." "Fossil Resins: a Compilation," was the work of Clarence Lown and Henry Booth, and in the miscellaneous collections of the Smithsonian Institute (No. 785) Alfred Tuckerman prepared a "Bibliography of the Chemical Influence of Light." Thomas Egleston's "Catalogue of Minerals and Synonyms" contains, it is claimed, several thousand more names than any other published index; and from Thomas Sterry Hunt we have a "Systematic Mineralogy," based on a natural classification. G. Frederick Wright gave 29 pages to "Supplementary Notes to the Third Edition of 'The Ice Age in North America,'" and James D. Dana wrote "On the Four Rocks of the New Haven Region," in illustration of the features of non-volcanic igneous ejections, with a guide to walks and drives about the city. A second revised edition was made of Prof. Joseph Le Conte's "Evolution"; Josiah Parsons Cooke published a companion volume to "The New Chemistry" in "Laboratory Practice"; Samuel P. Sadtler, "A Hand-book of Industrial Organic Chemistry"; Arthur V. Abbott, "A Treatise on Fuel"; Edwin H. Hall and Joseph Y. Bergen, Jr., "A Text-book of Physics," largely experimental, on the basis of the Harvard College "Descriptive List of Elementary Physical Experiments," "Experiments of Aërodynamics," by Prof. Samuel P. Langley ("Smithsonian Contributions to Knowledge," No. 801), attempted to demonstrate—not explain—any act of mechanical flight as possible. Sidney Perley made a study of "Historic Storms" from 1620 to the present time, and a revised edition was published of "War and the Weather," by E. Powers. Samuel Sheldon supplied "Chapters on Electricity"; T. O'Connor Sloane, "Electricity Simplified"; Philip Atchinson, "The Elements of Dynamic Electricity and Magnetism"; Edward Trevert, "Electricity and its Recent Applications" and "Dynamoes and Electric Motors and all about them." "Dynamo Construction," by John W. Urquhart, and "Electro Motors," by S. R. Bottone and Alfred M. A. Beale, "A Practical Guide to the Testing of Insulated Wires and Cables," by Herbert Laws

Webb, "The Electric Transmission Hand-book," by F. B. Badt, "A Practical Treatise on the Incandescent Lamp," by J. E. Randall, "Telephones, their Construction and Fitting," by F. C. Allsop, and "The Electro-Plater's Hand-book," by G. E. Bonney, were timely and useful volumes. "The Electrical Boy," by the inimitable author for boys, J. T. Trowbridge, conveyed scientific information in the most attractive manner, while "Ethereal Matter, Electricity, and Akasa," was a theory advanced by N. Kolkin. "Hints to Power Users," by Robert Grimshaw, and "The Chemical Analysis of Iron," by Andrew A. Blair, belong to applied science also. In mathematics we have "Geodesy," by J. Howard Gore; "An Introduction to Spherical and Practical Astronomy," by Dascom Greene; "Plane and Solid Geometry," by Seth T. Stewart; a "College Algebra," and "Six Place Logarithmic Tables," by Webster Wells; "A Higher Algebra," by G. A. Wentworth; and "The Sextant and other Reflecting Mathematical Instruments," by F. R. Brainerd. "The Young Astronomer," by James H. Carlisle, supplied helps to a knowledge of the constellations, and "Optical Projection," by Lewis Wright, was a treatise on the use of the lantern in exhibition and scientific demonstration.

In mental philosophy we have "Hegel's Logic, a Book on the Genesis of the Categories of the Mind; a Critical Exposition," by Hon. William T. Harris, the accomplished metaphysician and United States Commissioner of Education; "Mechanism and Personality: an Outline of Philosophy in the Light of the Latest Scientific Research," by Francis A. Shoup, D. D.; "Outlines of Physiological Psychology," by George Trumbull Ladd; "Studies in Psychology," by S. G. Burney; "The Soul of Man, an Investigation of the Facts of Physiological and Experimental Psychology," by Paul Carus; and a "Hand-book of Psychology, Feeling, and Will," by James Mark Baldwin. "Quickness of Perception," in the "Memory and Thought Series," was by Hans Breitman (Charles Godfrey Leland), while "Eye and Ear Memory" consisted of chapters Rev. Jesse L. Hurlbut, D. D., and others. In the "Evolution Series" "The Scientific Method" was set forth by Francis Ellingwood Abbot; "Form and Color in Nature," by William Potts; "Herbert Spencer's Synthetic Philosophy," by B. F. Underwood. H. E. Haferkorn compiled "Handy List of Books on Mines and Mining."

History.—Fewer works of history were published in 1891 than in 1890, the total number being 124. "Historical Essays," by Henry Adams, covered various periods, while, proceeding chronologically, we have "The Defenses of Norembe," by Eben Norton Horsford; "The Pilgrim Fathers in Holland," a paper read before the New England Historical and Genealogical Society, March 4, 1891, by William C. Winslow, D. D.; "The Colonies, 1492-1750," by Reuben Gold Thwaites, in the new series of "Epochs of American History"; "Sir William Johnson and the Six Nations," by William Elliot Griffis, in the "Makers of America" series; two volumes upon "The American Revolution," by John Fiske, in continuation of his plan for a complete history of the United States from 1492 to 1865; "The French in America during the War of Independence," by Thomas Balch (deceased), first

printed in French, in Paris, and now translated by Thomas Willing Balch (his son); "Spanish Institutions of the Southwest," by Frank W. Blackmar; "The Spanish Conspiracy," kindred in theme, by Thomas Marshall Green; "The United States and Spain in 1790: an Episode in Diplomacy described from hitherto Unpublished Sources," edited, with an introduction, by Worthington Chauncey Ford; and the "Evolution of the Ordinance of 1787," with an account of the earlier plans for the government of the Northwest Territory, by Jay A. Barrett, in the "University of Nebraska Seminary Papers." Horace E. Scudder wrote "A Short History of the United States" for beginners, and Alexander Johnston "A Shorter History of the United States" for schools. Part IV of Vol. IV and Parts I, II, and III of Vol. V "American Historical Association Papers" were published, and the fifth and last volume of the "History of the United States of America under the Constitution," by James Schouler, saw the light, closing with the election of President Lincoln. "The Voice of the People," by W. H. F. Henry, contained valuable documents and information; and "Studies in American History," by Mary Sheldon Barnes and Earle Barnes, were intended for young students. "The Story of Kentucky" was told by Emma M. Connelly in the "Story of the States" series, and that of "New York in the War of the Rebellion, 1861-65 (Historical and Statistical)," was compiled by Frederick Phisterer. Other histories of the civil war are: "Thirty Years after," by Edwin Forbes, the famous war correspondent, who modestly declares it an artist's story; "Battlefields and Victory," by Willis J. Abbot; "The Battle of Gettysburg, 1863," by Samuel Adams Drake; "The Battle of Seven Pines," by Maj.-Gen. Gustavus W. Smith, C. S. A.; a second edition of "The Defense of Charleston Harbor," by Maj. J. Johnson; "Recollections of a Private: a Story of the Army of the Potomac," by Warren Lee Goss; and, from contemporary newspaper columns, the account of the "Kinston, Whitehall, and Goldsborough (North Carolina) Expedition." Gouverneur Morris wrote "The History of a Volunteer Regiment" (Sixth New York), while the "Orderly Book of the Maryland Loyalists Regiment, June 18, 1778, to Oct. 12, 1778," was edited by Paul Leicester Ford. To the series of "Historic Towns" Henry Cabot Lodge contributed "Boston" and Theodore Roosevelt "New York." The first of four volumes of "The Memorial History of the City of New York from its First Settlement to 1892," edited by James Grant Wilson, was issued, covering the period from 1492 to 1700. "A Classic Town: the Story of Evanston, by an Old Timer," came from the pen of Miss Frances E. Willard; Herman P. De Forest and Edward C. Bates were joint authors of "The History of Westborough" (Mass.), and J. J. Babson supplied a second series of "Notes and Additions to the History of Gloucester" (also Mass.). "The Birth, Marriage, and Death Register, Church Records, and Epitaphs of Lancaster, Mass., 1643-1850," were edited by Henry S. Nourse, and the "History of St. George's Parish," Spottsylvania County, Va., by Philip Slaughter, D. D., was edited by R. A. Brack. "The Communes of Lombardy from the 6th to the 10th Century" were treated by W. Klapp Will-

iams in the "Johns Hopkins University Studies," another volume of which was a "History of Liberia," by J. H. T. McPherson, and H. H. Northrop wrote "The History of the French Revolution, 1789-1795, or a Country without a God." "The Parnell Movement," by T. P. O'Connor, had a sketch of the author by Thomas Nelson Page. S. M. Burnham described "Struggles of the Nations," or the principal wars, battles, sieges, and treaties of the world. "The History of Historical Writing in America" was given by J. Franklin Jameson (originally in four lectures delivered at Johns Hopkins University in 1887); and to the press of the same institution we are indebted for "Seminary Notes on Recent Historical Literature," by H. B. Adams, J. M. Vincent, and other authorities.

Housekeeping.—"House and Hearth," by Harriet Prescott Spofford, gives 23 chapters of thoughts on the making and keeping of homes. "The Washington Cook-book: Statesmen's Dishes" consists of autographic receipts by Mrs. Benjamin Harrison, Mrs. William Windom, and others, followed by "The Chafing-dish and the Blazer," by Mrs. H. P. Bailey. "Cookery with a Chafing-dish" was handled by Thomas J. Murray, and Mrs. H. Llewellyn Williams prepared "The Book of Ices." No. 1 of "The Information Readers," by E. A. Beal, M. D., covered "Foods and Beverages," and Mrs. T. J. Kirkpatrick supplied "The Modern Cook-book." "Good Housekeeping," anonymous, contained information relating to the management of the household and servants, costs, and quantities, etc., and more than 2,000 practical recipes are to be found in "The Every-day Cook and Recipe Book," by Miss E. Neil.

Jurisprudence:—"Constitutional Legislation in the United States," by John Ordronaux. "Statutes and Statutory Construction," by J. G. Sutherland, and a second edition of "The General Principles of Constitutional Law in the United States of America," by Hon. Thomas M. Cooley, belong to the higher departments of jurisprudence, while works of the year having a more or less national bearing are: "A Treatise on the Law of Citizenship in the United States, treated historically," by Prentiss Webster; "A Treatise on Extradition and Interstate Rendition," in two volumes, by John Bassett Moore; "The Interstate Commerce Law," by John T. Wentworth; "Laws of the United States relating to Currency, Finance, and Banking from 1789 to 1891," compiled by Charles F. Dunbar; "The Question of Copyright," a summary of the copyright laws at present in force in the chief countries of the world, by George Haven Putnam; "The Pension Lawyer's Digest"; "Interference Proceedings in the United States Patent Office," edited by Woodbury Lowery; Vol. II of a "Digest of the Decisions of the Supreme Court of the United States," by Henry C. Danforth, bringing the same down to October, 1891; Vols. IV and V of the "American Digest" (Annals 1890 and 1891) and "The Statutes at Large from December, 1890, to March, 1891," sent out by the Government Printing Office, making Vol. XXVI. Russell H. Curtis edited "Important Federal Statutes annotated."

In general law we have "Commentaries on the Jurisdiction of Courts," by Timothy Brown,

an "Index-Digest of Rights, Remedies, and Practice at Law under the Codes and in Equity," by John D. Lawson; "A Treatise on Suits in Chancery," by Henry R. Gibson; "A Treatise on the Law of Judgments, including the Doctrine of Res Judicata," in two volumes, by Henry Campbell Black; and a "Brief for the Argument of Questions arising upon the Pleadings on the Trial of Issues of Law, or Fact in Civil Actions at Law, in Equity and under the New Procedure," by Austin Abbott, who published also "New Cases selected chiefly from Decisions of the Courts, with Notes," "A Digest of New York Statutes and Reports, from July, 1882, to Jan. 1, 1890," and "New Cases selected chiefly from Decisions of the Courts of the State of New York, with Notes" (Vol. XXVI). A second edition was made of "The Practice in the Courts of Law in Civil Cases," by R. T. Barton, and of "The Law of Liens," by Leonard A. Jones; and William A. Keener arranged "Selections from Leake's Elements of the Law of Contracts and Finch's Cases on Contracts," in two volumes, as a text-book for law students. John A. Finch prepared a "Digest of Insurance Cases," Frederick H. Cooke wrote on "The Law of Life Insurance," and James H. Gilmore "Notes of a Course of Lectures on Smith's Mercantile Law." From William G. Myer came "Vested Rights: Selected Cases and Notes on Retrospective and Arbitrary Legislation affecting Vested Rights in Property"; from Emlin McClain, a "Synopsis of Elementary Law (Substantive and Remedial) and the Law of Personal Property"; from John Chipman Gray, "Select Cases and other Authorities on the Law of Property"; from William T. Brantly, "Principles of the Law of Personal Property"; from Christopher G. Tiedeman, "A Treatise on the Law of Sales of Personal Property"; from Joseph J. Darlington, "A Treatise on the Law of Personal Property, founded on Williams"; and from Alfred S. Bolles, "The Law of the Suspension of the Power of Alienation in the State of New York." "Suspension of the Power of Alienation and Postponement of vesting under the Laws of New York, Michigan, Minnesota, and Wisconsin," was treated by Stewart Chaplin; and concerning corporations we have two volumes by Walter Murphy on "Corporations in Pennsylvania"; "Company Law," by Charles Fisk Beach, Jr., in two volumes also; Vol. VI of "American Railroad and Corporation Reports," edited and annotated by John Lewis; "The Law of Receivers of Corporations including National Banks," by James Fraser Gluck and August Becker; "Municipal Bonds," by Eben H. Gay; "Nebraska Railroad Law," by Leavitt Burnham; "The Law of Railway Lines," by William C. Anderson; Vols. XXXI, XXXII, and XXXIII of "American and English Corporation Cases"; and Vols. XLIV, XLV, and XLVI of "American and English Railroad Cases." Vol. III of "The Law of Liens in Pennsylvania," by W. Trickett, was issued, also "A Treatise on the Law of Bills of Lading," by William W. Porter, and "A Treatise on the Law of Chattel Mortgages," by Darius H. Pingrey. A second edition, rewritten and enlarged, appeared of "The Law of Expert Testimony," by Henry Wade Rogers, and S. D. Thompson laid down the "Law of Electricity."

"New Commentaries on Marriage, Divorce, and Separation," by Joel Prentiss Bishop, filled two volumes. James M. Kerr was the author of "A Treatise on the Law of Homicide"; H. W. Chaplain, of "Cases on Criminal Law" (for use in the law school of Harvard University); and Charles A. Ray, of "Negligence of Imposed Duties, Personal." Russell Duane selected "The Case of the Sayward" for the law oration delivered at the commencement exercises of the University of Pennsylvania, June 11, 1891; "Cases on Torts" were selected and arranged for the use of law students in connection with "Pollock on Torts," by Francis M. Burdick, and "Interrogatory Law" comprised 1,280 questions submitted to the graduating classes of the law school of Cincinnati College for the years 1879-'91. Vols. XVI to XXI, inclusive, of "American State Reports," by A. C. Freeman, were issued, also Books 9 and 12 of "Lawyers' Reports annotated," edited by Robert Desty. Of local importance are "The Statutes of Oklahoma, 1890," compiled under the supervision and direction of Robert Martin, Secretary of the Territory; "Real-estate Statutes of Indiana," by T. E. Ballard and E. Emerson; an "Analytical Index and Digest of the Supreme Court Reports of Georgia," by Howard Van Epps; a "Digest of Decisions of the Supreme Judicial Court of Massachusetts," edited by Henry E. Randall and A. E. Wislizenus; and "A Treatise on Practice in the Courts of Pennsylvania," by F. Carroll Brewster, in two volumes. Everett W. Pattison prepared "Forms for Missouri Pleading," and Gorham D. Williams "The Massachusetts Peace Officer." The average number of reports were also reached from the several States. Vols. XIV, XV, and XVI of the "American and English Encyclopedia of Law," compiled under the editorial supervision of John Houston Merrill, appeared; also a "Dictionary of Law," by Henry Campbell Black, and "Martindale's American Law Directory for 1890-91."

To the literature of law belong "The History of the Supreme Court of the United States," by Hampton L. Carson, in two superb volumes, and "The Criminal Jurisprudence of the Ancient Hebrews," by Rabbi S. Mendelsohn, LL. D.

Medicine and Surgery.—In medicine we have "Fever: its Pathology and Treatment by Antipyretics," by Hobart Amory Hare, M. D., an essay to which was awarded the Boylston prize of Harvard University July, 1890; "The Modern Antipyretics," by John Ott, M. D.; "The Physical Diagnosis of the Diseases of the Heart and Lungs and Thoracic Aneurism," by D. M. Cammann, M. D.; a "Practical Treatise on Diseases of the Skin," by Henry G. Piffard, M. D., and Robert M. Fuller, M. D.; "Familiar Forms of Nervous Disease," by M. Allen Starr, M. D.; and a ninth edition, corrected and enlarged, of "A Treatise on the Diseases of the Nervous System," by William A. Hammond, M. D., and M. Graeme, M. D. Part II of "A Text-book of Ophthalmoscopy," by Edward G. Loring, M. D., was edited and revised by F. B. Loring, and D. N. Skinner, M. D., wrote on "The Care of the Eyes in Health and Disease." "Prof. Koch's Cure for Consumption (Tuberculosis)" was popularly explained by H. Feller, M. D. Samuel C. Bussey, M. D., treated "Congenital

Occlusion and Dilatation of Lymph Channels," and J. Compton Burnett, M. D., "The Greater Diseases of the Liver." "Insomnia and its Therapeutics" was by A. W. Macfarlane, M. D.; "Sprains: their Consequences and Treatment," by C. W. Mansell Moullin, M. D.; "Dyspepsia" (in the "Red Cross Series"), by John Dewar; "Lectures on Tumors from a Clinical Standpoint," by John B. Hamilton, M. D.; and "La Grippe and its Treatment, for General Readers," by Cyrus Edson, M. D., Chief of the Health Department of New York. "Abnormal Intra-thoracic Air Pressures and their Treatment" was the title of an address by Charles Denison, M. D., before the American Climatological Association, Sept. 2, 1890. "Studies in Pathological Anatomy," by Francis Delafeld, M. D., filled two volumes; and Frederick B. Robinson published Vol. I of "Practical Intestinal Surgery." E. Martin, M. D., and Hobart Amory Hare, M. D., were joint authors of "The Surgical Treatment of Wounds and Obstruction of the Intestines," and Egbert H. Grandin, M. D., and Josephus H. Gunning, M. D., of a "Practical Treatise on Electricity and Gynecology." Vol. II of "Materia Medica and Therapeutics," by John V. Shoemaker, M. D., had especial reference to the clinical application of drugs. From C. H. Leonard, M. D., came "The Pocket Materia Medica and Therapeutics," and from William D. Gentry, M. D., "The Rubrical and Regional Text-book of the Homœopathic Materia Medica: Selection on the Urine and Urinary Organs." "A Treatise on Practical Anatomy for Students of Anatomy and Surgery" was prepared by Henry C. Boenning, M. D., and "The Student's Atlas of Artistic Anatomy," by C. Roth, was edited, with an introduction, by C. E. Fitzgerald, M. D. John Hund, M. D., wrote "A Sketch of Surgical History (after Hecker)," and P. C. Remondino, M. D., a "History of Circumcision from the Earliest Times to the Present," with moral and physical reasons for its performance. A second edition was made of "Diseases of the Digestive Organs in Infancy and Childhood," by Lewis Sparr, M. D. "Health without Medicine," by Theodore H. Mead; "Power through Repose," by Anna Payson Call; "Drinking Water and Ice Supplies, and their Relations to Health and Disease," by T. Mitchell Prudden, M. D.; "An Elementary Hand-book on Potable Water," by Floyd Davis; "Taking Cold," by Francke H. Bosworth, M. D.; "Hygienic Physiology," by D. F. Lincoln, M. D.; "Household Hygiene," by Mary Taylor Bissell, M. D., who wrote also "Physical Development and Exercise for Women"; "Comprehensive Physical Culture," by Mabel Jenness; "Woman and Health," by M. Augusta Fairchild, M. D.; "The Mother's Guide and Daughter's Friend," by an old practitioner; and "Vacation Time," by H. S. Drayton, M. D., with "Hints on Summer Living," deal with methods of prevention rather than cure; while "Helps for Home Nursing," by Irene H. Orington; "The Doctor at Home and Nurse's Guide-book," edited by George Black, and "A Cyclopædia of Family Medicine, Surgery Nursing, and Hygiene," by Henry Hartshorne, M. D., are excellent and useful of their kind. "Therapeutic Sarcognomy," by Joseph Rodes Buchanan, M. D., is an application of the science of the soul,

brain, and body to the therapeutic philosophy and treatment of bodily and mental diseases. From Frederick S. Sozinsky, M. D., we have a work on "Medical Symbolism," and from Paul Paquin, M. D., another on "The Supreme Passions of Man." "Wood's Medical and Surgical Monographs" reached No. 1 of Vol. XII, and Vol. XII was also issued of the "Index Catalogue of the Library of the Surgeon-General's Office," Washington, D. C.

Poetry.—Among the 193 books of poetry published in the year not one possessed striking merit, though there were several charming and graceful collections. "The Sister's Tragedy, with other Poems, Lyrical and Dramatic," of Thomas Bailey Aldrich, stands in the foremost rank. "The Poet and his Self," by Arlo Bates, is reflective, as is also "Two Worlds," by Richard Watson Gilder. Edgar Fawcett published "Songs of Doubt and Dream"; Waitman Barbe, "Ashes and Incense"; James Whitcomb Riley, "The Flying Islands of the Night" and "Neighborly Poems on Friendship, Grief, and Farm Life"; Lizette Woodworth Reese, "A Handful of Lavender," 75 short poems dedicated to "the sweet memory of Sidney Lanier"; Nora Perry, "Lyrics and Legends"; Kate Tannatt Woods, "Grandfather Grey, a companion to 'Grandmother Grey'"; Mrs. Laura Garland Carr, "Memories and Fancies"; Elizabeth Akers, "The High Top Sweeting and other Poems"; Madison Cawein, "Days and Dreams"; Celia Thaxter, "Verses"; Frank Chaffee, "Songs of Spring"; J. D. Vinton, "Shadows from Life"; Isabella T. Aitken, "Bohemia and other Poems"; Morris Garth, "Cuba," an incident in the insurrection, and other verse; I. McC. Wilson, "The Fate of the Leaf"; Henry O'Meara, "Ballads of America"; Anna M. Richards, "Letter and Spirit Poems"; and Isaac Baxley, "Songs of the Spirit." Mrs. Sarah M. B. Piatt's volume of short poems was entitled "An Irish Wild-flower"; "The Perfume Holder" was a Persian love poem by C. L. Betts; Dr. Weir-Mitchell contributed "A Psalm of Deaths"; William S. Taylor, "Man Immortal, an Allegorical Poem"; Emma Withers, "Wildwood Chimes"; and Meredith Nicholson entitled his "Short Flights" into the region of fancy poems and sonnets. We have "Allen Dorman," a biography and poems; Joseph H. Young was responsible for "Lyrics"; M. I. Anson, for "The Vision of Misery Hill"; G. H. A. Conrard, for "A Junior's Poems"; Louis J. Block, for "Dramatic Sketches and Poems"; and Richard Hovey, for "Launcelot and Guenevere, a Poem in Dramas." Franklyn W. Lee wrote "Dreamy Hours"; Charles L. Thompson, "Etchings in Verse"; Frank W. Gunsaulus, "Phideas and other Poems"; Denton J. Snider, "Homer in Chios: an Epopee"; and Prof. W. Cleaver Wilkinson, "The Epic of Saul." "The Ride to the Lady," by Helen Gray Cone, and "An Idyl of the Sun," by Orrin C. Stevens, are not to be forgotten, nor a second series of "Poems," by Emily Dickinson. "The White Shoshone," by Charles L. Paige, and "Winona: a Dakota Legend," by E. L. Huggins, are akin in that they treat of Indian life. Walt Whitman bade "Good-by, my Fancy." A memorial volume of James Russell Lowell was entitled "Odes, Lyrics, and Sonnets," and "The Lost

Ring and other Poems," by Mrs. Caroline A. Mason, had an introduction by Charles G. Ames. "Lyrics of the Living Church: Original Poems," were edited by C. W. Leffingwell, while "Tales of the Turf and 'Rank Outsiders,'" by Richard L. Cary, Jr. (Hyder Ali), were illustrated by Gean Smith. "A Midsummer Lark," by W. A. Croffut, went through a second edition, and William Dean Howells opened a new series ("Harper's Black and White") with "The Albany Dépôt," a laughable farce. "Sunshine in Life" was a collection of poems for the King's Daughters, compiled and arranged by Florence P. Lee. The "Treasury of Favorite Poems" was a contribution to the "Vignette Series" by Walter Learned. "The Passion Play in 'Oberammergau,' 1890," was described by William Allen Butler. Three unique volumes were "Republica: a National Poem in Seven Parts," by J. P. Campbell"; the "Story of the Union in Rhyme, 1492-1892," anonymous; and "The American Epic," a poetic history of our country from the Stamp act, 1764, to the McKinley Tariff bill, 1890, by Drummond Welburn.

Political, Social, and Moral Science.—In politics we have an "Introduction to the Study of Federal Government," by Albert Bushnell Hart ("Harvard Historical Monographs," No. 2), and, in the "Johns Hopkins University Studies," "Government and Administration of the United States," by Westel W. and William F. Willoughby. "State and Federal Government in Switzerland" was treated by John M. Vincent. Prof. John W. Burgess devoted two volumes to "Political Science and Comparative Constitutional Law," and Alex. L. Peterman wrote "Elements of Civil Government," a text-book for use in public schools, etc. Samuel Freeman Miller delivered "Lectures on the Constitution of the United States," and Alfred Bayliss prepared "Easy Lessons on the Constitution." "The British *versus* the American System of National Government" was a paper read by A. H. F. Leffroy before the Toronto branch of the Imperial Federation League, Dec. 18, 1890, and John George Bourinot, clerk to the Canadian House of Commons, made "Canadian Studies in Comparative Politics." "Recent Constitution-making in the United States: North Dakota, South Dakota, Montana, Washington," by Prof. Francis Newton Thorpe, appeared in publications of the American Academy of Political and Social Science, and, in the "Johns Hopkins University Studies," "The Constitutional Development of Japan, 1853-1881," by Iyenaga Toyokichi. Prof. Arthur Latham Perry published an entirely new work on "Principles of Political Economy," and "The Educational Value of Political Economy" was handled by Prof. Simon N. Patten. "The Reader's Guide in Economic, Social, and Political Science" was supplied by Richard R. Bowker and George Iles, and "Rudimentary Economics for Schools and Colleges," by George M. Steele. Slack Worthington had a volume on "Politics and Property," and Henry S. Chase, M. D., wrote "Letters to Farmers' Sons on the Questions of the Day." "The Report of the Proceedings of the American Economic Association" at the fourth annual meeting was issued, and from its publications was reprinted "The Tide of Economic Thought," an address delivered by Francis A.

Walker, at Washington, D. C., before the Association, Dec. 26, 1890. "The Riddle of the Sphinx," by N. B. Ashby, was a discussion of various economic questions, and "Food and Feeding considered as a Factor in making the Rates of Wages or Earnings" formed the substance of an address by Edward Atkinson to the Cotton Manufacturers' Association, April 26, 1891. "Which? Protection, Free Trade, or Revenue Reform?" consisted of the best articles of the most eminent political economists and statesmen on these subjects, edited by H. W. Furber, and another volume of the same character was "Both Sides of the Tariff Question by the World's Leading Men." "Protective Philosophy," by D. H. Rice, discussed the principles of the protective system as embodied in the McKinley bill, and John D. Goss wrote "The History of Tariff Administration in the United States from Colonial Times to the McKinley Administrative Bill." William Draper Lewis, in the "University of Pennsylvania Series of Political Economy and Public Law," considered "Our Sheep and the Tariff," and Porter Sherman sent out "A Tariff Primer." "The Corporation Problem" disturbed William W. Cook as to the public phases, uses, abuses, benefit, dangers, wealth, and power of corporations, as well as the industrial, economic, and political questions to which they have given rise; and A. B. Stickney discussed "The Railway Problem." Achille Loria submitted to the American Academy of Political and Social Science a paper entitled "Economics in Italy," and "How to Co-operate" was explained by Herbert Myrick. "Economic and Industrial Delusions" was a discussion of the case for protection by Arthur B. and Henry Farquhar. "Radical Wrongs in the Precepts and Practices of Civilized Man," by J. Wilson, opens, not inaptly, another class of works, among which are: "The Condition of Labor," an open letter to Pope Leo XIII by Henry George, with the "Encyclical Letter" of that prelate; "White Slaves; or the Oppression of the Worthy Poor," by Lewis Albert Banks, and "Thirty Years of Labor," a history of the organization of working men by T. V. Powderly. "Recent Development of American Industries," by the Class of '91, initiated Vol. I of "Wharton School Studies in Politics and Economics of the University of Pennsylvania." "Public Lands and Agrarian Laws of the Roman Republic" were treated by Andrew Stephenson in the "Johns Hopkins University Studies," and in publications of the American Economic Association appeared "Government Forestry Abroad," by Gifford Pinchot; "The Present Condition of the Forests on the Public Lands," by E. A. Bowers; and "Practicability of an American Forest Administration," by B. E. Fernow. "The Farmer's Side: his Troubles and their Remedy," by Hon. W. A. Peffer, United States Senator from Kansas, gives an authoritative presentation of the aims and views of the Farmers' Alliance, and, in line with the same, John N. Cunningham proposes "The New Constitution: how the Farmer may pay off his Mortgage, and the Working Man become his own Master." Marshall M. Kirkman contributed a monograph on "Railway Rates and Government Control," and Edward W. Bemis wrote on "Municipal Ownership of Gas in the United States." "The Char-

acter and Influence of the Indian Trade in Wisconsin" was discussed by Frederick J. Turner. In the "Questions of the Day Series" "Parties and Patronage in the United States," by Lyon Gardiner Tylor, traced the "spoils system" back to the organization of the National Government in 1789-1801; "Congress and Cabinet," by Gamaliel Bradford, discussed the advisability of giving the heads of executive departments seats in the national Legislature; while John S. Billings, M. D., delivered an address before the American Academy of Political and Social Science at the Art Club, Philadelphia, Jan. 14, 1891, on "Public Health and Municipal Government." "Africa and America" was the title of addresses and discourses by Rev. Alexander Crummell, rector of St. Luke's Church, Washington, D. C., an African, on subjects connected with his race, and from W. Cabell Bruce came a consideration of "The Negro Problem," which offered no solution. Henry D. Barrows published "International Bi-metallism, an Essay"; W. W. Admire, a "Political and Legislative Hand-book of Kansas"; Charles F. Dole, "The American Citizen"; A. D. Peterman, "Elements of Civil Government"; and Harriette R. Shattuck, "The Woman's Manual of Parliamentary Law." George Gunton wrote on "Principles of Social Economics inductively considered and practically applied, with Criticisms on Current Theories"; Robert Archey Woods, on "English Social Movements"; Walter Francis Wilcox, on "The Divorce Problem: a Study in Statistics." H. S. Pomeroy asked "Is Man too Prolific? the So-called Malthusian Idea," and "The New School of Criminal Anthropology" formed the subject of an address by Robert Fletcher, M. D., before the Anthropological Society of Washington. Andrew J. Palm also treated "The Death Penalty," and a second series of "Papers in Penology" was compiled by the editor of the "Summary," Elmira, N. Y. "The Prison Question," by Charles H. Reeve, and "The American Siberia, or Fourteen Years' Experience in a Southern Convict Camp," by J. C. Powell, bear further on the subject; while of special interest are the collection of papers by George Kennan on "Siberia and the Exile System," from the "Century Magazine" (with additions), into two superb volumes; "Siberia and the Nihilists; why Kennan went to Siberia," by William Jackson Armstrong; and "The New Era in Russia," by Charles A. de Arnaud. "The Cyclopædia of Temperance and Prohibition," a volume of 670 pages, provides all possible information on all phases of the drink question.

Sports and Pastimes.—"Sport: or Fishing and Shooting," edited by A. C. Gould, and illustrated from the fifteen original water colors by A. B. Frost, Henry Sandham, F. H. Taylor, and others, is by far the handsomest book falling under this class. "The Camp-Fires of the Everglades, or Wild Sports in the South," were described by C. E. Whitehead, and "The Fishes of North America that are taken on Hook and Line," by William C. Harris, the latter work being in forty monthly parts, illustrated with colored lithographs. "The Complete Angler" is a practical guide to bottom fishing, trolling, spinning, and fly fishing, with a chapter on sea fishing. Henry Austin drew up "American Game and Fish Laws," and "Will Wildwood" (Fred. E. Pond)

prepared "The Sportsman's Directory." "Who Won't the Official American Yacht Record for 1891," compiled by James C. Summers, completes the fifth year of that important publication, and in the "Hand-book Library" we have an "Aquatic Guide" and "Campbell's Lawn Tennis, and the Way to play it." James M. Rice wrote a "Range Manual and Score Record," and Henry W. Struss "Ring Riding," a collection of movements and commands designed for the use of riding schools and clubs. "How to get Muscular" is the title of five addresses by Charles Wadsworth, Jr., and Walter Camp treated "American Football." To Fisher Ames we are indebted for "A Practical Guide to Whist by the Latest Scientific Methods" and for "American Leads at Whist"; to J. T. Mitchell for "Duplicate Whist," and to Robert F. Green for "Solo Whist." "Concise Whist," giving accepted American leads, was anonymous. As a supplement to "American Whist illustrated," G. W. P. supplied "Whist in Diagrams." T. H. B. compiled "Conventional Whist Leads," while Eugene S. Elliott chronicled "Proceedings of the First American Whist Congress held at the City of Milwaukee, April 14-17, 1891." "Gambling" was discussed by James Harold Romain from the standpoint of "true philosophy and ethics," and "The Gambling Games of the Chinese in America" by Stewart Culin in the "University of Pennsylvania Series in Philology, Literature, and Archaeology" (Vol. VI, No. 4). "The Two-move Chess Problem" was treated by B. G. Laws. "A Box of Monkeys and other Farce Comedies," by Grace Livingston Furniss, are intended for amateur and parlor presentation, and "Original Charades," by L. B. R. Briggs, were collected from "Scribner's Magazine." Sports and pastimes of all kinds are covered by the small numbers of the "Manual Library," from eminent authorities. Among these may be mentioned the "Swimming Instructor," by Capt. Webb, and the "Amateur and Professional Oarsman's Manual" by W. Beach. "Man's Friend the Dog," by George B. Taylor, gave information as to the value of the different breeds of dogs and the best way to care for them.

Theology.—More works in this department were published in 1891 than in the year preceding, but none more important. "Church and Creed," three sermons by Rev. R. Heber Newton, presents that divine's understanding of "the doctrine of Christ as this Church hath received the same," and from the same author we have "Five-Minute Talks for Young People, or the Way to Success." Twenty-two "Sermons" were selected and published from the writings of Rev. Howard Crosby; from Andrew P. Peabody, D. D., came "King's Chapel Sermons"; from Rev. Edwin H. Burgess, a volume of sermons entitled "At the Place which is called Calvary"; from Charles H. Parkhurst, D. D., "Three Gates on a Side, and other Sermons"; from Charles Cuthbert Hall, D. D., a volume of twenty discourses, entitled, "Into His Marvelous Light"; and Wellesley W. Bowditch, D. D., edited "Interdenominational Sermons" by prominent ministers of different sects. Frederick H. Hedge, D. D., contributed twenty-four "Sermons"; J. DeWitt Burkhead, D. D., "Theology for the Masses"; Dr. James Boyd Brady, "Saengerfest Sermons," on the sanctity of the Sab-

bath; and John Steinfert Kedney, D. D., "Mens Christi, and other Problems in Theology and Christian Ethics." "Prayer, its Nature, Conditions, and Effects" were treated by C. A. Van Ando, D. D.; "Jesus Christ, the Proof of Christianity," by Bishop John F. Spaulding; "Our Father's Kingdom," by Julius H. Seelye; "The Larger Christ," by George D. Herron; "The Advancing Kingdom, or the Wonders of Foretold History," by Rev. F. E. Tower. "Baptismal Remission," by G. W. Hughey, D. D., and "Christianity and Some of its Evidences: an Address," by Oliver Mowat, are more or less allied in tone. "Different New Testament Views of Jesus" were collated by Joseph H. Cooper from the Unitarian standpoint, while the "Socialism of Christ" was contended for by Austin Bierbower. From James M. Hoppin (Professor of the History of Art in Yale University) came nine "Sermons upon Faith, Hope, and Love, together with Home Homilectics." "Institutes of the Christian Religion," by Emanuel V. Gerhart, D. D., had an introduction by Rev. Philip Schaff. James Strong considered "The Doctrine of a Future Life from a Scriptural, Philosophical, and Scientific Point of View." "Waymarks, 1870-1891" was the title of discourses of Bishop Henry C. Potter, D. D., with some account of their occasions. Prof. John Bascom, of the University of Wisconsin, formulated "The New Theology," and P. H. Steenstra, in a series of lectures, discussed "The Being of God as Unity and Trinity." Francis Howe Johnson asked "What is Reality?" "Positive Religion" consisted of essays, fragments, and hints, by Joseph H. Allen, and J. Macbride Sterrett argued upon "Reason and Authority in Religion." Richard N. Davies presented the Biblical evidence for the "Doctrine of the Trinity," while "The Harmony of Ethics with Theology" was an essay in revision by Henry E. Robbins, D. D. E. H. Johnson, D. D., drew up an "Outline of Systematic Theology," and James T. Bixby denominated an examination of rational ethics in the light of modern science "The Crisis in Morals." J. R. Miller, D. D., wrote on "Making the Most of Life"; A. J. Baird, D. D., on "The World and how to take it"; W. Thornton, on the "Origin, Purpose, and Destiny of Man"; Prof. Robert Ellis Thompson delivered the L. P. Stone Lectures for 1891 on "The Divine Order of Human Society"; the Bohnen Lectures for the same year were by Rev. William Reed Huntington upon "The Peace of the Church"; and the Yale Lectures on Preaching by James Stalker, D. D., on "The Preacher and his Models." Rev. T. De Witt Talmage preached "Among the Holy Hills: Sermons principally relating to Palestine," and "Twenty-five Sermons on the Holy Land"; he also published "From Manger to Throne." A second edition was made of the "Evolution of Man and Christianity," by Rev. Howard Macquary, whose "Topics of the Times" consisted of eight lectures and nine sermons, and whose defense before the ecclesiastical court of the Episcopal Church in northern Ohio against the charge of heresy was printed under the title of "Ecclesiastical Liberty." Rev. Morgan Dix, in a series of sermons during Lent, 1891, defined "The Authority of the Church as set forth in the Book of Common Prayer, Articles, and Canons," and Henry R. Per-

cival also digested and arranged "The Doctrine of the Episcopal Church so far as it is set forth in the Prayer Book." "The General Ecclesiastical Constitution of the American Church" was the theme of the Bohlen Lectures for 1890 (published in 1891) by Bishop William Stephens Perry (of Iowa), and George R. Crooks, D. D., edited a symposium upon "The Present State of the Methodist Episcopal Church." A "Hand-book of the Presbyterian Church in the United States of America, 1891" was edited by Rev. William P. White, and Edward D. Morris wrote "A Calm Review of the Inaugural Address of Prof. Charles A. Briggs. Rabbi Isaac M. Wise, in his "Pronaos to Holy Writ," established on documentary evidence the authorship, date, form, and contents of each of its books and the authenticity of the Pentateuch, while the "Harmony of Ancient History and Chronology of the Egyptians and Jews" was traced by Malcolm Macdonald. "Exegesis" was the theme of an address delivered at the opening of the autumn term of Union Theological Seminary, Sept. 24, 1891, by Bishop Marvin Vincent, and Orello Cone, D. D., had a volume upon "Gospel Criticism and Historical Christianity." "Christus Mediator," by Charles Elliott, D. D. (an historical and exegetical treatise on the atonement); "Fact and Fiction in Holy Writ," by J. Hendrickson McCarty, D. D.; "The People of the Book" by Maurice H. Harris; "Who wrote the Bible, a Book for the People," by Washington Gladden, D. D.; "Seven Lectures on the Credibility of the Gospel Histories," by Rev. John Henry Barrows; "Biblical Scholarship and Inspiration," two papers, by Llewellyn J. Evans and Henry P. Smith; "The Change of Attitude toward the Bible," an address before the Biblical Institute in Boston, by Joseph H. Thayer; "The Great Discourse of Jesus the Christ, the Son of God," anonymous; "Historical Evidences" of both the Old and New Testaments, published by the American Tract Society; "Studies in Old Testament History," by Jesse L. Hurlbut, D. D.; Vol. II of a "Commentary on the Old Testament," by Daniel Steele, D. D., and John W. Lindsay; "Saint Matthew's Witness to Words and Works of the Lord," by Francis W. Upham; "Studies in John's Gospel," by David Gregg, D. D.; "A Commentary on the Epistle to the Romans," by R. V. Foster, D. D.; "The Apocalypse, its Structure and Primary Predictions," by David Brown, D. D.; a new translation of "The Psalms," by John De Witt, D. D., as another of the book of Job under the title of "The Epic of the Inner Life," by John F. Genung; "The Gospel of Spiritual Insight, Studies in the Gospel of St. John," by Dr. Charles F. Deems; and "The Busy Man's Bible," by George W. Cable, have special value, while from J. N. Fradenburgh, D. D., we have "Fire from Strange Altars," a study of the environment of the religion of the Hebrews, with the necessary effects thereon, and "Departed Gods," a concluding volume of a series on the great religions of the world. Rev. J. A. Birkhauser narrated "The History of the Church (Roman Catholic) from its First Establishment to our Own Times," and Henry Eyster Jacobs that of "The Lutheran Movement in England during the Reigns of Henry VIII and Edward VI." Vol. II was issued of "Papers of the American Society of

Church History." J. E. Alexander, D. D., wrote "A Brief History of the Synod of Tennessee from 1817 to 1877"; Brooke Foss Wescott, D. D., "Essays in the History of Religious Thought in the West"; Rev. Dwight M. Pratt, D. D., "A Decade of Christian Endeavor, 1881-1891"; while from Mary Abigail Dodge (Gail Hamilton) came "A Washington Bible Class," followed by "A Chicago Bible Class," from the pen of Ursula N. Gestefeld. Vols. I and II of a second series of "A Select Library of the Nicene and Post-Nicene Fathers of the Christian Church" were edited by Philip Schall, D. D., who made "St. Chrysostom and St. Augustine" the subject of "Studies in Christian Biography." The errors, ignorance, etc., of "John Calvin" and the Presbyterian Church were disclosed and exposed by T. H. Hinchman and James Bell, while "What Rome teaches" was shown by "The Nun of Kenmare," Mary Frances Clare Cusack. "From Ocean to Ocean" described the march of the Salvation Army from the Atlantic to the Pacific, chronicled by Ballington Booth. Twenty-five "Sermons on the Way to Salvation," by Rev. Charles G. Finney, the revivalist, were selected and arranged by Henry Cowles, while "Intimations of Eternal Life" were given by Caroline C. Leighton, and Lucy Larcom had a small volume, "As it is in Heaven." "The Drift of the Young Men with relation to the Churches" was studied by Rev. C. E. Harrington, D. D., and "How to become a Christian" was told in five simple talks to the young by Lyman Abbott, D. D. "Sovereign Grace" and "Four Gospel Dialogues" comprised addresses by D. L. Moody, and John M. Armour wrote on "Mercy and the Law." "What can Ethics do for us?" was asked by William Mackintire Salter in an address. The "Standard Eclectic Commentary on the International Sunday-school Lessons for 1892," by Alfred N. Gilbert, had geographical notes by J. W. McGarvey, and Drs. David J. and Joseph D. Burrell prepared "Hints and Helps on the Sunday-school Lessons for 1892." "Selections from the Religious and Literary Writings of J. H. Bocock, D. D.," were edited by his widow, and "Living Thoughts of John Wesley" were put in shape by James H. Potts. Henry F. Reddall compiled "Golden Memories of the Book of Books," in picture, song, and story, J. F. B. Tinling furnished "Fifteen Hundred Facts and Similes for Sermons and Addresses," and Rev. Elias B. Sanford edited "A Concise Cyclopedia of Religious Knowledge." "The Public Uses of the Bible" was a study in Biblical elocution by George M. Stone. "The Miracles of Missions" were recounted by Arthur T. Pierson, who published also "Stumbling Stones removed from the Word of God," "The Divine Enterprise of Missions," a series of lectures, and "The Greatest Work in the World." Philo F. Leavens, D. D., in "The Planting of the Kingdom" gave a synopsis of the missionary enterprise, and L. P. Brockett, M. D., told "The Story of the Karen Mission in Bassein, 1830-1890."

Voyages and Travels.—A country which has of late been brought prominently to the attention of the world was visited by two journalists of distinction in 1891, Thomas Stevens performing a ride of more than 1,000 miles "Through Russia on a Mustang," taking photo-

graphs *en route*, with which his book is illustrated, and Charles A. Stoddard going "Across Russia from the Baltic to the Danube." Henry T. Finck published "Spain and Morocco: Studies in Local Color," and George Bailey Loring, M. D., ex-United States minister to Lisbon, described "A Year in Portugal, 1889-1890." "The Boy Travelers in Northern Europe," by T. W. Knox, and "Our Young People in Norway," by Augusta W. Kellogg, were juvenile in tone, as indicated by their names, and from Virginia W. Johnson we had "The Lily of the Arno, or Florence Past and Present." "The Swiss Republic," by Winchester Boyd, consists of notes made during four years of diplomatic service in that country, and "Three Vassar Girls in the Tyrol" suggests at once Mrs. Elizabeth W. Champney. "The Stream of Pleasure" is the title given a narrative of a journey on the Thames, from Oxford to London, by Joseph and Mrs. Elizabeth Robins Pennell, with a practical chapter by J. G. Legge, and Leonard Allison Morrison made a tour in seven countries "Among the Scotch-Irish." "By Land and Sea" chronicled incidents of travel, with chats about history and legends, and was from the pen of Mrs. J. M. Francis, wife of the United States minister at the courts of Greece, Portugal, and Austria-Hungary. Alpheus Spring Packard, M. D., in "The Labrador Coast" gave a journal of two summer cruises, with notes on the history, geology, etc., of that region, and Helen Mather described "One Summer in Hawaii." From Edward Everett Hale we have "Afloat and Ashore," and from Matthew Woods, M. D., "Rambles of a Physician," in two volumes. Under the title of "Our Italy" Charles Dudley Warner describes southern California in his own inimitable way, and Charles Ledyard Norton completed his "Hand-book of Florida," Part I of which appeared in 1890. C. V. Hine writes with enthusiasm of his trip in a canoe "On the Indian River," in that State, and from Cecil Charles we have "Honduras: the Land of Great Depths," which supplies much practical information. "The South and its People" are treated by W. Robbins Falkner, and "Southwest Virginia and Shenandoah Valley" by Thomas Bruce. Alfred Robinson delineates "Life in California during a Residence of Several Years," and 26 papers by Frank Bolles are entitled "Land of the Lingering Snow: Chronicles of a Stroller in New England from January to June." "California and Alaska" were visited by William Seward Webb, and in "Atlantis arisen" Mrs. Frances F. Victor described "Washington and Oregon." Book 4 of "The World and its People," edited by Larkin Dunton, is by Fanny E. Coe, and devoted to "Our American Neighbors." "The Spanish American Republics" is a richly illustrated volume for which we are indebted to Theodore Child, and in this connection may be mentioned bulletins issued by the Bureau of American Republics, State Department, Washington, D. C., entitled "Hand-books of the American Republics." "A Run around the World," anonymous, describes the adventures of three young Americans, and from Elizabeth Bisland we have "A Flying Trip around the World." "Note: an Unexplored Corner of Japan" was welcomed from Percival Lowell; Alice Mabel Bacon described "Japanese Girls

and Women"; Eliza Ruhamah Scidmore, "Jinrikisha Days in Japan"; and M. B. Cook, "Japan, a Sailor's Visit." "How we went and what we saw," by Charles McCormick Reeve, was the record of a flying trip through Egypt, Syria, and the Ægean Islands, and "The Beautiful Land, Palestine," by John Fulton, D. D., had an introduction by Bishop Henry C. Potter. Rev. Nathan Hubbell chronicled "My Journey to Jerusalem," with travels in other countries, and a tour around the world to study missions was summed up by Daniel M. March, D. D., in "Morning Light in Many Lands." Martin Brimmer published an illustrated volume describing the history, religion, and art of ancient Egypt. Samuel A. Mutchmore, D. D., devoted two volumes to "The Moghul, Mongol, Mikado, and Missionary." Bishop John F. Hurst wrote "Indika: the Country and People of India and Ceylon," and supplied an introduction to "A Winter in India and Malaysia among the Methodist Missions," by M. B. V. Knox, D. D. Rev. Josiah Tyler described "Forty Years among the Zulus." "The Land of the Lamas," by William Woodville Rockhill, consists of notes on a journey through China, Mongolia, and Tibet, made in disguise by the adventurous young American, who has had but two predecessors in the region, and who traveled 700 miles where no white man had ever set foot before. Herbert Ward gave to the world "My Life with Stanley's Rear Guard," and important translations bearing on the vexed question of the Emin Relief Expedition are "New Light on Dark Africa" from the German of Carl Peters, by H. W. Dulcken, and "Ten Years in Equatoria and the Return with Emin Pasha," from the Italian of Gaetano Casati, by Mrs. J. Randolph Clay, assisted by I. Walter Savage Landor. Hezekiah Butterworth continued his "Zigzag Journeys in Australia," and from Charles Erskine, the only survivor of the United States exploring expedition under Admiral Charles Wilkes (1838-40), we have "Twenty Years before the Mast." Charles Paul Mackie went "With the Admiral of the Ocean Sea" on his momentous voyage. Hugh Craig compiled "Great Arctic Travelers," and among guide-books may be mentioned, "Chicago and its Environs," by L. Schick; "Chicago, the Marvelous City of the West," by John J. Flinn; "San Antonio de Bexar, a Guide and History," by William Corner; "Glimpses of Pilgrim Plymouth," anonymous; "The Canadian Guide-book," by Charles G. D. Roberts; "A Week in New York," by Ernest Ingersoll; "Appletons' Dictionary of New York," in its thirteenth year; and Appletons' Hand-books of summer and winter resorts.

Unclassified.—On an all-absorbing topic we have "The World's Fair: its Meaning and Scope," by H. G. Cutler, and "World's Fairs, from London, 1851, to Chicago, 1893," by Gen. Charles B. Norton, a pamphlet of 93 pages, profusely illustrated, sent out by the committee of the World's Columbian Exposition. "The New York Obelisk: Cleopatra's Needle" was the subject of a volume by C. E. Moldenke, and Robert Coltman, Jr., M. D., treated "The Chinese; their Present and Future; Medical, Political, and Social." "Federal Finances," or the income of the United States, by W. E. Burke, explains simply and concisely the system of taxation as carried

on by the Government, with no attempt to discuss its merits or those of any other system; George M. Coffin prepared a "Hand-book for National Bank Shareholders," defining their legal rights and liabilities, while a third edition with important additions was made of his "Hand-book for Bank Officers" in general. Three additional chapters were annexed to Charles F. Dunbar's "Chapters on the Theory and History of Banking," and Hon. John Wanamaker published an argument in favor of "Postal Savings Banks." G. M. Harcourt wrote a "Banking and Commercial Guide"; Mrs. Sallie Joy White, on "Business Openings for Girls," eminently practical; while "Type-writing and Type-writers," by Arthur E. Moore, told also how to choose a machine. The "Book of Legal Dictation," by Charles Currier Beale, and "Office Work in Short-hand" are useful in their line, as is also a practical guide for inventors by E. P. Thompson, entitled "How to make Inventions." "How to make Money out of Inventions" was told by A. Schemmel. D. Walter Brown explained the "American Patent System." "Stories of Industry" for young people, by A. Chase and E. Clow, give an idea of the trades and manufactures of the world; only Vol. I, however, was issued during the year. T. O'Connor Sloane described "Rubber Hand-stamps and the Manipulation of India Rubber." Vol. II was published of the "Architectural and Building Monthly." "The Domestic House Planner" was anonymous. "A Move for Better Roads" was the title given to prize essays on the subject of the common roads of the United States. F. Hodgman drew up a "Manual of Land Surveying," and Francis Wyatt wrote on "The Phosphates of America." "The Tannins," of which Vol. I appeared, by Henry Trimble, leads naturally to "Leather Manufacture," by John W. Stevens, and thence to "That Uncomfortable Shoe," a plain and practical treatise by Avard J. Moore. "The Principles of Agriculture" were set down for common schools by I. O. Winslow, and "Mushrooms" were exhaustively treated by William Falconer. Mrs. Nettie Colburn Maynard startled the public with the question "Was Abraham Lincoln a Spiritualist?" "The Transition Curve Field Book," by Conway R. Howard; "The Engine Runner's Catechism," by Robert Grimshaw; "Constructive Steam-Engineering," by Jay M. Whitham; "The Corliss Engine," by John T. Henthorn; "Valve Gears," by H. W. Spangler; Vol. IV of "Practical Blacksmithing," by M. T. Richardson; "Strength and Properties of Materials," by William G. Kirkaldy; "Architectural Iron and Steel," by William H. Birkmire; with "The Metal Worker," a series of essays on house-heating, edited by A. O. Kittredge; and "A Treatise upon Wire," by J. Bueknall Smith, are pre-eminently suggestive and valuable. "Hannibal," in the "Great Captain Series," by Theodore Ayrault Dodge, carries on his history of the art of war to the battle of Pydna, 168 B. C.; while "The Principles of Strategy" were illustrated mainly from American campaigns by John Bigelow, Jr. "A Manual of Guard Duty," by L. W. V. I. was published by the authority of the War Department, Washington, D. C., and "Drill Regulations for Street Riot Duty" were drawn up by Gen. Albert Ordway. Vol. II of "Modern

was translated from the French of V. Derrocagaix, by C. W. Foster; Henry Metcalf devoted two volumes to "Ordnance and Gunnery"; A. C. Gould (Ralph Greenwood) wrote on "Modern American Rifles"; a second edition was made of "Notes on Military Science and the Art of War," by Joseph M. Califf, and William W. Dietz prepared "The Soldier's First-aid Hand-book." But perhaps the most important book of the year, in this line, was "The New Infantry Drill Regulations," which supersedes Upton's "Tactics." "The Old Navy and the New" was the subject of a timely volume by Rear-Admiral Daniel Ammen, U. S. N., with an appendix of personal letters from Gen. Grant; and "Ocean Steamships" was the title given to a series of articles giving a popular account of construction, development, management, and appliances which appeared in "Scribner's Magazine," from the pens of F. E. Chadwick, J. D. J. Kelley, Ridgely Hunt, and others, collected into a handsome book.

"Patterson's Illustrated Nautical Dictionary" was edited by Howard Patterson; William Gilpin proposed a scheme for "The Cosmopolitan Railway"; William R. Hutton described "The Washington Bridge," known during its construction as the Harlem River Bridge and Manhattan Bridge; and Wolcott C. Foster wrote "A Treatise on Wooden-trestle Bridges." "Weddings" were treated by the author of "Cards," and the work entitled "Gentlemen" gave hints necessary on occasion. "Shall Girls propose?" was asked by a speculative bachelor, among other papers on "Love and Marriage." "Health, Happiness, and Longevity" were eulogized, and rules given for their attainment by L. P. McCarty, and Eleanor Kirk (E. M. Ames) told succinctly "The Woman's Way to Health and Beauty." Agnes H. Morton's handy little volume on "Correspondence" gave suggestions, precepts, and examples for the constructing of letters, and a practical guide for "copy" writers, by Alexander G. Nevins, was entitled "The Blue Pencil and how to avoid it." "The Press of North Carolina in the Eighteenth Century," by Stephen B. Weeks, was of special interest to printers and publishers. "National Flowers," by Fannie A. Dean, was suggested by the discussion concerning the national flower of America. A. Minott Wright contended for the United States as the greatest country in the world in "Three Months with the New York Herald"; while "The Britannica answered and the South vindicated" was a defense of that section against the aspersions of the "Encyclopædia Britannica" and a criticism of the work by T. K. Oglesby. "The American Catalogue," in three parts (founded by F. Leyboldt in 1876, and compiled under the editorial direction of R. R. Bowker), covered the books from July 1, 1884, to June 30, 1890, and other valuable works of reference were "United States Government Publications, July 1, 1884, to June 30, 1890," by R. R. Bowker and J. H. Hickcox; Vol. I of a "Complete Index to Littell's Living Age," for which we are indebted to Edward Roth; and "The Co-operative Index to Periodicals for 1890," edited by William I. Fletcher. "The Scientific American Cyclopædia of Receipts, Notes, and Queries," edited by Albert A. Hopkins, contains upward of 12,000 recipes. L. P. McCarty issued the "Annual Statistician and Economist," and

Oliver Optic his "Annual." "The Debater's Treasury," by William Pittenger, comprised a list of 200 questions, with notes and arguments; "Poor's Manual of Railroads of the United States for 1891" completed the twenty-fourth year of the work issued by H. V. Poor, whose "Second Annual Number of Poor's Hand-book of Investment Securities for 1891" was issued. "The Gast-Paul Directory of Bankers and Attorneys and Digests of the Laws" proved useful to many. Vol. XV of "Appleton's Annual Cyclopædia" for the year 1890 was sent out, and Vols. V and VI completed the great work of the "Century Dictionary." Among other noteworthy books of reference that appeared were "An Elementary Latin Dictionary," by Charlton T. Lewis, and the ninth enlarged edition (which he intimates is the final one) of John Bartlett's admirable "Familiar Quotations."

The following are the figures of book production in the United States for the years 1890 and 1891, as arranged for comparison under special classifications by the "Publishers' Weekly":

CLASS OF WORKS.	1890.	1891.
Fiction.....	1,119	1,105
Theology and religion.....	467	528
Juvenile.....	405	460
Education and language.....	399	355
Law.....	458	843
Literary history and miscellany.....	183	251
Fine art and illustrated books.....	135	228
Biography, memoirs.....	218	211
Political and social science.....	183	197
Poetry and the drama.....	168	193
Description, travel.....	162	139
History.....	158	124
Medical science, hygiene.....	117	108
Useful arts.....	133	106
Physical and mathematical science.....	98	97
Sports and amusements.....	82	79
Domestic and rural.....	29	71
Mental and moral philosophy.....	11	39
Humor and satire.....	42	26
Total.....	4,559	4,665

LITERATURE, BRITISH, IN 1891.

About the same number of books were produced during the year as in 1890; the total of new books, in all departments, exceeding by 15 the record of the previous year, while new editions were slightly fewer. The falling away was in divinity and sacred literature (about 10 per cent.), in *belles-lettres* and essays, in classical and school books, and in the fine arts and illustrated volumes. The estimate of about four novels for every working day (1,216 in all, of which 896 were new) includes a large collection of juvenile books, between which and fiction intended for older people the border line is growing yearly less defined. In travel and biography, in law books and in poetry, the increase was decidedly marked. Works on medicine and surgery were less numerous, while miscellany, including pamphlets, held its own.

Biography.—The most important contribution to literary biography made during the year was "The Life and Letters of Robert Browning," in two volumes, by his intimate friend Mrs. Sutherland Orr, which, falling short as it does of our desires and expectations, is nevertheless valuable. "Browning as a Philosophical and Religious Teacher" was also studied by Prof. Henry Jones. Mrs. Margaret O. W. Oliphant supplied a "Mem-

oir of the Life of Laurence Oliphant and of Alice Oliphant, his Wife," in two volumes; "Letters of Charles Dickens to Wilkie Collins" were edited by Lawrence Hutton; Frederic G. Kitton portrayed "Charles Dickens by Pen and Pencil"; and Percy Fitzgerald gave "The History of Pickwick" in addition to publishing "The Life of James Boswell," in two volumes. Mrs. Annie E. Ireland attempted, without signal success, to add to our knowledge of "The Life of Jane Welch Carlyle," reviving a painful story. "Swift, the Mystery of his Life and Love," by James Hay, was foolish and pretentious; while in the "Great Writers Series" the "Life of W. M. Thackeray" was ably written by Herman Merivale and Frank T. Marzials. "Dr. John Brown and his Sister Isabella" were sympathetically treated by E. T. McLaren; Elizabeth Wordsworth contributed a monograph on "William Wordsworth"; and from Bishop Charles Wordsworth came "Annals of my Early Life, 1806-'46," entertaining in the highest degree. Another interesting volume was "Richard Redgrave, R. A., C. B.: a Memoir compiled from his Diary," by his daughter, Miss F. M. Redway. "Later Leaves" was the title of further reminiscences by Montagu Williams, while "A Publisher and his Friends," being the memoir and correspondence of the late John Murray, with an account of the origin and progress of the house, in two volumes, and "Jasmin: Barber, Poet, Philanthropist" were two exceptionally attractive emanations from Dr. Samuel Smiles. "Letters of John Keats to his Family and Friends" were edited by Sidney Colvin, and "Select Passages from the Letters of Lady Mary Wortley Montagu" by A. R. Ropes. "Early Days recalled," by Janet Ross, and "Early Papers and Some Memories, 1850-'70," by Henry Morley, contain agreeable reminiscences. Three volumes are filled with the diary and letters of "Madame D'Arblay," edited by her niece, Charlotte Barrett; and "Mrs. Thrale, afterward Mrs. Piozzi" was a sketch of her life and passages from her diaries edited by L. B. Seeley. "Charles Stewart Parnell: a Memory," by T. P. O'Connor, was remarkable for its rapid accomplishment, having been written and published within a week; and other volumes dedicated to political leaders are: "Sir Robert Peel in Early Life, 1788-1812; as Irish Secretary, 1812-'18; and as Secretary of State, 1822-'27," edited by Charles Stuart Parker, M. P.; "Sir Robert Peel," by Justin McCarthy, M. P., in the "Series of Prime Ministers of Queen Victoria," the sixth number of which was "The Right Hon. William Ewart Gladstone," by George W. E. Russell; "Peel," again, in the "Series of Twelve English Statesmen," this time by J. R. Thursfield; "The Rt. Hon. Arthur MacMurrough Kavanagh," by his cousin, Sarah L. Steele, and from papers chiefly unpublished; and an "Anecdotal Life of Sir John Macdonald," by E. G. Biggar. "A Life of Love and Duty" was a memoir of Commodore Goodenough edited by his widow, and "Memorials of Rev. John Frederick Stevenson" were prepared by his wife. "George Gilfillan" was the theme of anecdotes and reminiscences by David Macrae; Arnold White edited "The Letters of S. G. O." (Rev. Lord Sidney Godolphin Osborne), in two volumes; "The Naturalist of Cumbria: a True Story,

being the *Life of David Robertson*," by his friend the Rev. Thomas R. R. Stebbing, was full of interest to admirers of the scientist. "Letters and Correspondence of John Henry Newman during his Life in the English Church" were edited by Annie Mozley, prefaced by a brief autobiography of the cardinal, whose brother, F. W. Newman, published "The Early History of the Late Cardinal Newman" in anything but a brotherly spirit. Edith C. Kenyon wrote a "Centenary Life of John Wesley," and "Wesley and his Successors" was a centenary memorial of the death of the founder of Methodism, from an unknown source; "Wesley: the Man, his Teaching, and his Work" was the title of sermons and addresses delivered in City Road Chapel at the centenary commemoration of John Wesley's death, and in the "Series of English Leaders in Religion" we have "John Wesley," by Canon Overton, and "Bishop Wilberforce," by G. W. Daniell. "The Life of Archibald Campbell Tait, Archbishop of Canterbury," was carefully and conscientiously written by Randall T. Davidson, Bishop of Rochester, and Canon Benham. "The 'Autobiography of Archbishop Ullathorne' was edited, with selections from his letters, by Augusta Theodosia Drane. Elizabeth R. Vermilye attempted "The Life of Alexander Duff" in the "Missionary Annals Series"; "A Modern Apostle: Alexander N. Somerville" was treated by Dr. George Smith, and the story of "John Kenneth MacKenzie, Medical Missionary to China," was told by Mary F. Bryson. Bishop Oxenden wrote the "History of my Life," and "General Booth" was an historical sketch by W. T. Stead. "Memorials of Robert T. Cunningham," edited by Rev. David Miller, "Thomas Sopwith," by B. W. Richardson, and "George Fife Angas: Father and Founder of South Australia," by Edwin Hodder, are lives of good if not illustrious men. "Speaking Years" was a memory of Rev. William Carus, formerly Canon of Winchester, by Rev. C. Bullock, and "Bishop Vesey of Sutton, Coldfield, and Exeter" came from J. R. Willington. "The Memoirs of the Tenth Royal Hussars (Prince of Wales's Own)" were collected and arranged by Col. R. S. Liddell, late their commander, and Vol. I was issued of "Heroes of Britain in Peace and War," by E. Hodder. "Some Historic Women" were chronicled by W. Davenport Adams, and among their number is to be reckoned "Emma, Lady Hamilton," by Hilda Gamlin. In the "English Men of Action Series" we have "Warwick, the King-maker," by C. W. Oman; "Sir Francis Drake," by Julian Corbett; and "Rodney," by David Hanney. In the "Rulers of India" "Clyde and Strathnairn," by Sir Owen Tudor Burne; "The Marquis Cornwallis" by W. S. Seton-Karr; "The Earl of Mayo," by Sir W. Wilson Hunter; and "Viscount Hardinge," by his son and private Secretary in India, Charles Viscount Hardinge. The "Life and Writings of Sir Thomas More," by Rev. T. E. Bridgett, is by far the most substantial and scholarly biography of the chancellor that has ever been written, and appeared opportunely. Albert Hastings Markham supplied the "Series of Great Explorers" with the "Life of Sir John Franklin, and the Northwest Passage." "Heroes of the Nations" who were chronicled in 1891 were:

"Pericles," by Evelyn Abbott; "Theodorie the Goth," by Thomas Hodgkin; and "Sir Philip Sidney," by H. R. Fox Bourne. "Thomas Beterton," by Robert W. Low, and "Charles Macklin," by Edward A. Parry, were the two contributions to the "Series of Eminent Actors"; and from J. R. Robinson and H. Hunter came "The Life of Robert Coates." Two volumes were devoted by (Canon) H. S. Holland and W. S. Rockstro to "Jenny Lind, the Artist, 1820-51." "Randolph Caldecott" was a personal memoir by H. Blackburn, and "The Life of Henry Dawson, Landscape Painter, 1811-78" was written by his son, Alfred Dawson. "Watts Phillips: Playwright and Artist" was contributed by his sister, Miss Watts Phillips, and a sketch of "Maria Drummond" came from C. Kegan Paul. "Colingwood" was the subject of a volume by W. Clark Russell, and Admiral Sir Augustus Philipmore dubbed Admiral Sir William Parker "The Last of Nelson's Captains." "Heroes of the Telegraph" were immortalized by J. Munro, and to close this long but always interesting department, Vols. XXV, XXVI, XXVII, and XXVIII were issued of the "Dictionary of National Biography," edited by Leslie Stephen and Sidney Lee.

Essays.—Among the best books falling under this classification, which includes general literary miscellany, may be mentioned "Studies in Literature," by John Morley, covering a space of twenty years in date, and ranging from Wordsworth to "Maine on Popular Government" in theme, collected for the first time from various magazines and other sources. George Moore published his "Impressions and Opinions," and Oscar Wilde his "Intentions," a volume of essays containing the one on "The Decay of Lying"; Andrew Lang's "Angling Sketches" were illustrated by W. G. Burn-Murdoch, and he also sent out "Essays in Little." "A Characteristic of Modern Life" was studied by A. Jessopp, in five essays; while Robert Buchanan was the author of "The Coming Terror and other Essays and Letters." Lady Wilde's "Notes on Men, Women, and Books," the first series of selected essays, and "A Few Impressions from the Poems of Robert Browning," by Emily Atkinson, were received with favor, as were Joseph Jacobs's "Essays and Reviews from the 'Athenaeum'"; "Essays in English Literature" and "Essays on French Novelists," by George Saintsbury; "Writers and Readers," by G. Birbeck Hill; "Boethius: an Essay," by H. F. Stewart; "With Poet and Player," essays on literature and the stage, by W. Davenport Adams; and "On the Stage and Off," by Jerome K. Jerome, who also kept the "Diary of a Pilgrimage." Cardinal Newman's "Poetry with Reference to Aristotle's Poetics" was edited with an introduction and notes by Albert S. Cook, while the essay of the same prelate upon ecclesiastical miracles was discussed, not to say dissected, in "Philomythus: an Antidote against Credulity," by Dr. Edwin A. Abbott. "Forty Years in a Moorland Parish," by Rev. J. C. Atkinson, proved excellent reading, and contained much curious and antiquarian lore; somewhat in line with which was "Parson and Peasant: Some Chapters of their Natural History," by J. B. Burne. "Old Time Punishments" were the theme of William Andrews. Andrew Wilson

caught "Glimpses of Nature," while nowhere is she more tenderly and lovingly portrayed than in "Annals of a Fishing Village" and "On Surrey Hills," by J. A. Owen, who calls himself on the title-page of the last volume "A Son of the Marshes." J. R. Rees was at his best "With Friend and Book in the Study and the Fields." An "Introduction to the Study of the History of Language," by H. A. Strong, W. S. Logeman, and B. I. Wheeler, was a literary curiosity. "Primitive Folk Studies in Comparative Ethnology" were made by Elie Reclus in the "Contemporary Science Series," and a second series of "Yorkshire Legends and Traditions" was issued by Rev. Thomas Parkinson. "The Women of Turkey and their Folk Lore" were carefully studied by Lucy Garnett. "Studies in the Arthurian Legend," by John Rhys, held a high place, as did also "Olympus: Tales of the Gods of Greece and Rome," by Talfourd Ely. Two volumes contained "The Story of the Iliad" and "The Story of the Odyssey," by Rev. Alfred J. Church, with illustrations from Flaxman. Charles Godfrey Leland, with Albert Barrère, compiled "A Dictionary of Slang, Jargon, and Cant," in two volumes, embracing every variety known, and, as Hans Breitman, Leland also gave his attention to "Gypsy Sorcery and Fortune-Telling." Vols. I and II were published of the "Journal of the Gypsy Lore Society," and Dr. Raven, the well-known antiquarian, devoted himself to "The Church Bells of Suffolk." A fourth series of the "Bookworm," an illustrated treasury of old-time literature, appeared. J. C. Collins, in "The Study of English Literature," made a plea for its recognition and organization at the universities; and John Earle treated of "English Prose." "Names and their Meanings" was a book for the curious by Leopold Wagner; a second edition was made of "Pessimism," by James Sully, published fourteen years ago; and Alfred W. Pollard spoke "Last Words on the History of the Title-page," with notes on some colophons and twenty-seven facsimiles of title-pages. University life was described in "In Cambridge Courts," by R. C. Lehmann, and Andrew Clark edited "The Colleges of Oxford: their Histories and Traditions." Arthur Acland, M. P., compiled "The Guide to the Choice of Books," E. B. Sargent and Bernard Whishaw together prepared "The Guide Book to Books," and Henry Morley sent out Vols. VI and VII of "English Writers," covering the periods "From Chaucer to Caxton" and "From Caxton to Coverdale."

Fiction.—Several good novels were written, though not one made a marked sensation, not even "One of our Conquerors," by George Meredith, the first from his pen in a long time, but inferior to nothing that he had previously produced. Ralph Iron, now confessedly Miss Olive Schreiner, contributed "Dreams"; William Black wrote "Donald Ross of Heimra," dealing once more with the Scotch Highlands; Rudyard Kipling's reputation gained nothing by "Life's Handicap," a volume of very poor stories, "Mine Own People," and "Under the Deodars"; and his sister Miss Beatrice Kipling, made a first attempt in literature, not altogether successful, with "The Heart of a Maid." "Blanche, Lady Falaise," by J. H. Shorthouse, is, of course, mystical and

religious; and "My Danish Sweetheart," by W. Clark Russell, has the breath of the sea, as usual. "The Little Minister" and "Better Dead" were by J. M. Barrie, author of "A Window in Thrums"; "An Old Maid's Love," by Maarten Maartens; "The Scapegoat," by Hall Caine; "The Blue Pavilions," by Arthur Thomas Quiller-Couch, who masqueraded for a time under the pseudonym "Q," producing "Noughts and Crosses," a volume of short stories, which established his claim to originality and power. "Lord Arthur Saville's Crime and other Stories," by Oscar Wilde, possessed unusual merit. Three historical novels were "Darkness and Dawn, or Scenes in the Days of Nero," by Archdeacon Farrar; "The Story of Francis Cludde," by Stanley J. Weyman (whose latest was "The New Rector"); and "The White Company," by A. Conan Doyle. Maxwell Grey (Miss M. G. Tutti, of the Isle of Wight) followed "Dean Maitland" with "In the Heart of the Storm," while the two novels of Walter Besant were "Children of Gibeon," a strong book dealing with the laboring classes, and "St. Katherine's by the Tower." Thomas Hardy's "A Group of Noble Dames" proved well worth reading, though out of his customary vein. "Eric Brighteyes," by H. Rider-Haggard, and Grant Allen's four books—"The Great Taboo," "Dumaresq's Daughter," "What's bred in the Bone," and "Recalled to Life"—with their suggestive titles, were welcomed by the admirers of the respective authors. Beatrice Whitby, who made her name by "The Awakening of Mary Fenwick," published "A Matter of Skill," "One Reason why," and "On the Lake of Lucerne," the last volume containing five other stories. F. Anstey Guthrie wrote "Tourmalin's Time Cheques"; B. L. Farjeon, "Ties—Human and Divine" and "The Shield of Love"; George Mannville Fenn, "A Double Knot" and "A Golden Dream"; George MacDonald, "There and Back"; Mrs. Campbell-Praed, the "Romance of a Châlet" and "The Soul of the Countess Adrian"; F. W. Robinson, "Her Love and his Life"; Miss M. E. Braddon (Mrs. J. Maxwell), "The World, the Flesh, and the Devil"; Mrs. Margaret O. W. Oliphant, "The Railway Man and his Children," "The Heir Presumptive and the Heir Apparent," and Janet"; Adeline Sergeant, "Brooke's Daughter," and, in collaboration with Lester Ewing, "Name and Fame"; William Morris, the "Story of the Glittering Plain"; Du Maurier, the famous caricaturist, came out in a new rôle with "Peter Ibbetson"; and David Christie Murray and Henry Herman were together responsible for "He fell among Thieves," "The Wages of Sin" were graphically portrayed by Lucas Malet (Mrs. Kingsley Harrison). "Save me from my Friends," by E. F. Knight, conveyed more than one moral; Rosa Nouchette Carey contributed three of her cheery little romances, "Our Bessie," "Averil," and "Mary St. John," while novels pronounced excellent, but which can be only enumerated, without comment, are "A Just Impediment" and "Miss Maxwell's Affections," by Richard Price; "Mr. Chaine's Sons" and "Miss Wentworth's Idea," by W. E. Norris; "My First Love and my Last Love," by Mrs. J. H. Riddell; "Well Won," by Mrs. Alexander; "Within Sound of the Weir," by T. St.

E. Hake; "Consequences," by Egerton Castle; "The Roll of Honor," by Annie Thomas; "The Mischief of Monica" and "A Pinch of Experience," by Mrs. L. B. Walford; "A Divided Duty," by Ida Lemon; "A Man's Conscience," by Avery Macalpine; and "The Nugents of Carriconna," a delightful Irish story, by Tighe Hopkins. "Cross Currents" was by Mary Angela Dickens, a granddaughter of the great novelist; Miss Kettle dwelt upon "The Magic of the Pine Woods"; and "The Three Miss Kings" was an Australian story by Ada Cambridge. "From Shadow to Sunlight" came from the pen of the Marquis of Lorne; Rhoda Broughton, with the assistance of Elizabeth Bisland, described "A Widower Indeed"; Ouida's sole book was "Santa Barbara." Mrs. Hungerford (the Duchess) wrote "Little Rebel"; F. W. Maude, "A Merciful Divorce"; and Mona Caird, "A Romance of the Moors." "The Pilots of Pomona," by Robert Leighton, was an exceptionally fine contribution to juvenile literature, intended for boys.

Fine Arts.—In the "University Extension Manuals" the "Fine Arts" were exhaustively treated by Prof. G. Baldwin Brown, covering the whole field of painting, sculpture, and architecture, their philosophy, function, and historic accomplishment. The fourth number of the "Manuals" was "The Philosophy of the Beautiful," by William Knight. Philip Gilbert Hamerton described "The Present State of the Fine Arts in France," and L. F. Day studied "Nature in Ornament." "Hints to Amateurs: a Hand-book on Art," by Mrs. Louise Jopling, offered many useful suggestions. "Architectural Perspective" was by F. O. Ferguson; "Architecture of the Renaissance in England," illustrated by views and details from buildings erected between the years 1560-1630, by J. Alfred Gotch and W. Talbot Brown; while the "History of Indian and Eastern Architecture," formerly the third volume of the second edition of a "History of Architecture," by James Ferguson, was expanded into an independent and original work, in two volumes. A third revised edition of the "History of the Modern Styles of Architecture," by the same author, was also issued, a large additional space being given to the architecture of England and America. Vol. III appeared of "The Castellated and Domestic Architecture of Scotland," by David Macgibbon and Thomas Ross, the first two of which came out two years ago, and a fourth is to be expected. "An Inventory of the Church Plate of Leicester," by Rev. Andrew Trollope, filled two volumes, and was pronounced the most complete work of the kind that has yet appeared, the work on which occupied six years. "Engravings and their Value" was a guide for the print collector by J. H. Slater, and "The Masters of Wood Engraving," a magnificent volume, by W. J. Linton, admirably illustrated. A second edition, in one volume, of "A Century of Painters of the English School," by Richard and Samuel Redgrave, was welcomed, and "William Hogarth," by Austin Dobson, was filled with photographs of the artist's masterpieces. "G. G. Clivio (Miniaturist): Life and Works," with notices of his contemporaries and of the art of book decoration in the sixteenth century, by John W. Bradley, had 18 plates. In the "Illustrated Bi-

ographies of Great Artists Series" the "Landscape and Pastoral Painters of Holland" were treated by Frank Cundall, as were "David Cox and Peter De Windt," by Gilbert R. Redgrave (who also supplied a "History of Water-color Painting in England," in the "Series of Illustrated Art Hand-books"), and F. G. Stephens wrote a "Mémoir of George Cruikshank." Edward Gilpin Johnson edited "Reynolds's Discourses on Art," fifteen addresses of Sir Joshua, with a biographical and historical introduction. G. Woolisroft wrote on "Etching," supplying original illustrations, and W. H. May edited Vol. VIII of "English Etchings." For students of art J. Spencer prepared "Practical Perspective"; and R. Pratt, "Sciography, or Parallel and Radial Projection of Shadows." As in our own country, handsome gift-books were rare. "The Warwickshire Avon," by A. T. Quiller-Couch, with illustrations by Alfred Parsons; "The British Seas," with picturesque notes by W. Clark Russell and other writers, and the etchings and engravings after J. C. Hook, Colin Hunter, etc.; "The Flowers of Japan," by Josiah Conder; "By Seashore, Wood, and Moorland" peeps at nature, with 145 illustrations, by Edward Step; and "United States Pictures drawn with Pen and Pencil," by Richard Lovett, are among the best. "Players of the Period," by Arthur Goddard, was the title of a first and second series of anecdotal, biographical, and critical monographs on the leading English actors of the day.

History.—"The Imperial History of England," in three volumes, by William Cooke Stafford and Henry W. Dulcken, reaches from the earliest records to the present time; and from George Carter we have "Outlines of English History from 1066-1815." Part I of Vol. III appeared of "Annals of our Time," by H. Hamilton Fyfe, covering the period from the accession of Queen Victoria to the end of the year 1890; also Vol. IV of "Cassell's History of England," Jubilee edition. S. R. Gardiner's "History of the Great Civil War 1642-1649" and "The Interregnum (A. D., 1648-1660)," by F. A. Inderwick, approach each other closely in point of time. Osmund Airy wrote a "Text-book of English History for Colleges and Schools"; J. H. Anderson, a "History of George the Third's Reign"; while "The Industrial and Commercial History of England," traced in lectures delivered to the University of Oxford by the late James E. Thorold Rogers, was edited by his son, Arthur G. L. Rogers. "The Divorce of Catherine of Aragon," intended by James Anthony Froude as a supplementary volume to his "History of England," possesses all the brilliancy which marks the larger work, and was one of the marked contributions to literature of the year. "Body, Parentage, and Character in History: Notes on the Tudor Period" came from F. Jordan. Vol. II of "The History of Sicily from the Earliest Times," by E. A. Freeman, brought the work from the beginning of Greek settlements to the first intervention of the Athenians; Stephen A. Morse published Vol. II of "A History of the French Revolution," and also wrote "The Story of Portugal" for the "Story of the Nations Series"; "Waterloo Letters," hitherto unpublished, by officers who served in the cam-

paign of 1815, were edited with explanatory notes by Maj.-Gen. H. T. Siborne. Rev. E. Cobham Brewer's "Historic Note-book," with an appendix of battles, met many needs; R. Carstairs described "British Work in India"; J. T. Wheeler wrote "A College History of India, Asiatic and European"; and Archibald Forbes dealt with the same country in "Barracks, Bivouacs, and Battles." In the "Series of Events of our Own Time" he also depicted "The Afghan Wars," 1839-'42, and 1878-'80. "Eight Days: a Tale of the Indian Mutiny," by R. E. Forrest, filled three volumes. A. H. Howland made reflections upon "The New Empire," its origin and constitution and its relation to the great republic. A. Weir established the "Historical Basis of Modern Europe," and R. Hassencamp wrote a "History of Ireland." "South Africa from Arab Domination to British Rule," by R. W. Murray, and Vol. II of a "History of South Africa," by George McAll Theal, covering the period from 1795-1834, are cognate; "Mahdism and the Egyptian Soudan" were treated by F. R. Wingate, and "The Caliphate, its Rise, Decline, and Fall," by Sir William Muir. For an "Early Grecian History" (to 495 B. C.) we are indebted to A. H. Allcroft and W. F. Mason; for "The History of Commerce in Europe," to H. de B. Gibbins; while "Ten Years in Upper Canada, 1805-1815, being the Ridout Letters" was edited by Matilda Edgar. Vol. IV of William Kingsford's "History of Canada" covered the years from 1756-'68. In local history we have a "History of Hendon," by E. F. Evans; "A Short History of Clent," by John Amphlett; Vol. III of "The History of Hampton Court Palace," describing Orange and Guelph times, by Ernest Law; "London Past and Present," in three volumes, by Henry B. Wheatley, essentially a new work, though based on Cunningham's hand-book of the city. Richard Watson Dixon, "one of the few remaining clergy of the Church of England who have won for themselves a recognized place in modern literature," gave to the world Vol. IV of his "History of the Church of England from the Abolition of the Roman Jurisdiction"; and Vol. IV of "The Church of Scotland," edited by Prof. Story, consisted of "The Church and the Law," by Andrew Macgeorge, and "The Doctrine of the Church," by Rev. Dr. Milroy. A "History of the Christian Church from the Earliest Times to the Death of Constantine" was written by F. J. Foakes-Jackson, and a "History of the Church of England," for schools and families, by A. H. Hore. To educational history belongs "Eighteen Years of University Extension," by R. D. Roberts.

Physical, Moral, and Intellectual Science.

—In the first division we have "The Causes of an Ice Age," explored by Sir Robert Stawell Ball, the initial volume of the "Modern Science Series." Agnes M. Clerke set forth "The System of the Stars," while "The Meteoritic Hypothesis," by the able spectroscopist J. Norman Lockyer, was a statement of the results of a spectroscopic inquiry into the origin of cosmical systems. Dr. William Huggins, by whom stellar spectroscopy was, to a great extent, initiated, delivered an "Address to the British Association for the Advancement of Science" (of which he is president), at Cardiff, Aug. 19, 1891, devoted to

the increase of our knowledge of the heavens incident to the introduction of the spectroscope and the modern photographic plate into the observatory; and William F. Denning provided "Telescopic Work for Starlight Evenings," "Molecular Motion in the Radiometer, in Crookes's Tubes, and in Some other Phenomena" was studied by Daniel S. Troy, and "An Introduction to the Study of Petrology: the Igneous Rocks," by Frederick H. Hatch, brought together an amount of useful information impossible to be obtained elsewhere in the same compass. "The Scientific Papers of James Clerk Maxwell" were edited in two volumes, by W. D. Niven, eleven years after the death of their author, but proved neither less valuable nor less welcome for the delay; and "Zoological Articles," contributed by Prof. E. Ray Lankester and others to the recently completed edition of the "Encyclopædia Britannica," were collected into a volume and lavishly illustrated. "Animal Life and Intelligence" were studied by Prof. C. Lloyd Morgan, and David Syme wrote "On the Modification of Organisms." "A Hand-book of European Birds" was supplied for field naturalists and collectors by James Backhouse, Jr., and Henry Seebohm attempted the "Classification of Birds" in general. "The Riverside Naturalist" was from the pen of E. Hamilton. "A Text-book of Chemical Physiology and Pathology" was written by Prof. W. D. Halliburton, and Vol. II was issued of "A Dictionary of Applied Chemistry" by T. E. Thorpe. William Jago published "Inorganic Chemistry." "Color Blindness and Color Perception" were treated by T. W. Eldridge-Green, M. D., and "The Right Hand: Left-handedness" by Sir Daniel Wilson. "The History of Human Marriage" was a contribution to sociology by Edward Westermarck; Archdeacon Farrar gave himself to "Social and Present-day Questions"; "Modern Humanists," according to John M. Robertson in his sociological essays, were Carlyle, Stuart Mill, Emerson, Matthew Arnold, Ruskin, and Spencer, the author being himself a disciple and formerly a colleague of Charles Bradlaugh; Sidney Webb and Harold Cox united on "The Eight Hours' Day" question, and Mr. Webb produced, unassisted, the "London Programme." Vol. II of the "Labor and Life of the People," by Charles Booth, was published, with maps and appendix under a separate cover; and "The Co-operative Movement in Great Britain" was traced by Beatrice Potter. "Social Diseases and Worse Remedies" were the theme of letters written to the London "Times" by Prof. T. H. Huxley on Mr. Booth's scheme, and "A Plea for Liberty: an Argument against Socialism and Socialistic Legislation" consisted of an introduction by Herbert Spencer and essays by various writers, edited by Thomas Mackay. John Rae's "Contemporary Socialism" appeared in a new edition, and David Maxwell wrote "Stepping Stones to Socialism." George Howell described "Trade Unionism, New and Old," and John A. Hobson propounded "Problems of Poverty." "Black America," by W. Laird Clowes, was a volume of letters to the London "Times" on the subject of the ex-slave and his late master in the United States, written in 1890-'91; and Joseph Renner Maxwell studied "The Negro Question," offering hints for the

physical improvement of the negro race. Col. F. Maurice republished, with additions, his article on "War" in the "Encyclopædia Britannica"; "The Development of Navies during the Last Half-century" was traced by Capt. S. Erdley-Wilmot, the third volume of "Popular Lectures and Addresses," by Sir W. Thomson, was devoted to "Navigational Affairs"; and "The Last Great Naval War," by A. Nelson Seaforth, traced in imagination the future of England's fleet. In the "University Extension Manuals" "The Use and Abuse of Money" was discriminated by Dr. William Cunningham, and "English Colonization and Empire" formed the theme of Alfred Caldecott. "Short History of Political Economy in England" was also supplied by L. L. Price in the same series. J. N. Keynes gave himself to "The Scope and Method of Political Economy," and R. H. Inglis Palgrave issued the first part of a "Dictionary of Political Economy," to be completed in 12 parts. Part II of Vol. II of "The Theory of Credit," by Henry Dunning Macleod, was issued. "National Life and Thought of the Various Nations throughout the World," a series of addresses by the late J. E. Thorold Rogers, Erik Magnusson, and others, was designed to give information in a popular form, and "Studies in Statistics," by George Blundell Longstaff, performed the same office in a different manner. "The Oxford Movement," by the late Dean Church, covered the twelve years from 1833 to 1845, and Dr. B. F. Westcott furnished "Essays in the History of Religious Thought in the West." Goldwin Smith discussed "Canada and the Canadian Question," and "Canadian Studies in Comparative Politics" were made by John George Bourinot. "The Elements of Politics" were exhaustively discussed by Prof. Henry Sidgwick, and "Teaching in Three Continents" was reviewed by W. Caton Grasby from personal observation. "Modern Customs and Ancient Laws of Russia" were the theme of six lectures delivered at Oxford, by Maxime Kovalevsky, as was "The Little Manx Nation," of the Royal Institution Lectures, by T. Hall Caine. "The Lesson of the Revolution" was impressed on his fellow-countrymen by David Balsillie. J. R. Fisher and J. A. Strahan rendered lasting benefit by setting forth lucidly "The Law of the Press," while "The Pentateuch of Printing, with a Chapter on Judges," by William Blades, undertook in a somewhat fanciful manner to trace the rise and development of the art. The appearance of "Justice: being Part II of the Principles of Ethics," by Herbert Spencer, was welcomed in the intellectual world. The Gifford Lectures for 1890 before the University of Glasgow by Prof. F. Max Müller were upon "Physical Religion," following the former series delivered by him in 1888 upon "Natural Religion." Those upon the same foundation for 1891 were from Prof. Sir G. G. Stokes, M. P., upon "Natural Theology." The Bampton Lectures for 1891 were by Rev. Charles Gore, who in 1890 edited "Lux Mundi," and were upon "The Incarnation of the Son of God." The additions to the "Expositor's Bible" were six, namely: "The General Epistles of St. James and St. Jude," by Rev. Alfred Plummer; "The Gospel of St. John," by Rev. Marcus Dods; "The Acts of the Apostles," by Rev. G. T.

Stokes; "The Book of Proverbs," by Rev. R. F. Horton; "The Book of Ecclesiastes," by Rev. Samuel Cox; and "The Book of Leviticus," by Rev. S. H. Kellogg. "Matthew XXII to Mark XVI" and "St. Luke to St. John III" continued the "Sermon Bible," and Vols. XIII-XV were also issued of the "People's Bible." "An Introduction to the Literature of the Old Testament," by Dr. S. R. Driver, opened the "International Theological Library," and Frederick Gardener supplied "Aids to Scripture Study." To the "Men of the Bible Series" George Rawlinson contributed "Isaac and Jacob" and "Ezra and Nehemiah." Leonard A. Wheatley delighted the bibliographer with "The Story of the Imitatio Christi," and Rev. H. R. Haweis defined the limits of "The Broad Church." An address by Charles H. Spurgeon was entitled "The Greatest Fight in the World," and from the great preacher we have also sermons, as from Liddon, Cheyne, McLaren, Lightfoot, and several other eminent divines. Rev. G. Matheson made a careful analysis of "The Spiritual Development of St. Paul." Descending to the practical, we have "A Text-book of the Science of Brewing," by E. Ralph Moritz and George Harris Morris; notes on "Epidemic Influenza," its origin and method of spreading, by Richard Sisley, M. D., and "Diphtheria: its Natural History and Prevention," by R. Thorne Thorne, being the Milroy Lectures before the Royal College of Physicians of London for 1891. "Racing Reminiscences and Experiences of the Turf," by Sir George Chetwynd, in two volumes, and "Turf Celebrities I have known," by William Day, delighted sportsmen, who also received, in the "Badmington Library," "Riding and Polo," from Robert Weir, and "Famous Golf Links," from several experts. W. A. Kerr published "Practical Horsemanship" and "Riding for Ladies," and Alfred Hutton a manual for teacher and pupil called "The Swordsman."

Poetry.—"The Light of the World," by Sir Edwin Arnold, long expected and hailed with wide acclaim, proved somewhat disappointing. Volumes of "Poems" by Ruskin and Lecky attracted some attention because of the fame of their authors as prose writers. "Narrative Poems" and "Lyrical Poems," by Alfred Austin, are pronounced the most varied, spontaneous, and attractive of his verse; and another volume of rare merit was "Renaissance," by Walter Crane. Frederick Tennyson published "Daphne and other Poems." "The Shorter Poems of Robert Bridges" were received with favor; Lord Houghton's "Stray Verses, 1889-1890," recall his father in some measure; and from Robert Buchanan came "The Outcast, a Rhyme for the Times." William Sharp followed Walt Whitman in "Sospiri di Roma"; "In the Valhalla," by J. Y. Geddes, attracted attention as the effort of a working man; Rev. J. F. Langbridge produced "The Cracked Fiddle"; and other volumes which possessed merit in varied directions were "A Light Load," by Dolly Radford; "Michael Villiers, Idealist, and other Poems," by Emily Hickey; "Charybdis and other Poems," by Helen M. Wraithman; "The March of Man," by Alfred Hayes; "Gleanings," by E. L. Tomlin; "Verses Grave and Gay," by Ellen Thornycroft Fowler; and Aus-

tralian "Songs from the South," by J. B. O'Hara; while "Younger American Poets, 1830-1890," were edited by Douglas Sladen, with an appendix of "Younger Canadian Poets." "The Poets and Poetry of the Century," edited by Alfred H. Miles, to be completed in ten volumes, had four issued in 1891, covering "Crabbe to Coleridge," "Southey to Shelley," "Keats to Edward, Lord Lytton," and "William Morris to Robert Buchanan." Andrew Lang edited "The Blue Poetry Book," and W. E. Henley "Lyra Heroica." "Elizabethan Songs in Honour of Love and Beautie," collected and illustrated by Edward H. Garrett, had an introduction by Andrew Lang. A cheap edition of the "Poetical Works of Dante Gabriel Rossetti" was made, and "Poems," by Mrs. Archer Clive, were reprinted, with additions, after fifty years.

Voyages and Travels.—Among the most prominent books of the year in this department were: "Japonica," three papers originally written for "Scribner's Magazine," by Sir Edwin Arnold, collected into a handsome volume, with illustrations from life, and "Seas and Lands," a series of letters also from his pen to the London "Daily Telegraph" from both America and Japan. "The Story of the Rear Column of the Emin Pasha Relief Expedition," edited by Mrs. James S. Jameson, and "My Personal Experiences in Equatorial Africa as Medical Officer of the Emin Pasha Relief Expedition," by Dr. T. H. Parke, practically, it is to be hoped, closed the unfortunate controversy of last year. From Jane F. Moir we have "A Lady's Letters from Central Africa," and from L. Monteith Fotheringham, "Adventures in Nyassaland," a two years' struggle with Arab slave dealers in the same region. "Home Life on an Ostrich Farm," by Mrs. Annie Martin, was one of the most striking descriptions of South Africa ever penned, and attracted wide attention. Ronald Smith was at home in the "Great Gold Lands of South Africa," and E. P. Mathers dwelt upon "Zambesia: England's El Dorado in Africa." "Life in Ancient Egypt and Assyria," by G. Maspero, and "Pharaohs, Fellahs, and Explorers," a series of lectures delivered by Miss Amelia B. Edwards in the United States in 1889, were of special value. Henry C. Barkley took "A Ride through Asia Minor and Armenia," and H. de Windt "A Ride to India Across Persia and Beloochistan." "Journeys in Persia and Kurdistan," by Isabella L. Bird (Mrs. Bishop), included a summer in the Upper Karun region and a visit to the Nestorian Rayans; Miss Ellen Miller went "Alone through Syria"; Rose Monteiro described "Delagoa Bay: its Natives and Natural History"; J. Foreman, "The Philippine Islands"; and Mrs. Dora Hoyt, "Tahiti: the Garden of the Pacific." Other women who traveled and described their travels during the year were Mrs. Oliphant, who visited "Jerusalem," and Charlotte Elizabeth Riddell, who made "A Mad Tour, or a Journey undertaken in an Insane Moment through Central Italy on Foot." "Glimpses of Italian Society in the Eighteenth Century," from the journal of Mrs. Piozzi, were furnished with an introduction by the Countess Evelyn Montenegro Cesaresco. "A Girl in the Karpathians," by M^{lle} Muriel Norman; "Peeps at Portugal," by W. O'Connor

Morris; "Across the Border; or, Pathan and Belooch," by E. E. Oliver; "A Summer in Kieff, or Sunny Days in Southern Russia," by Isabel Morris; "In Troubadour Land: a Ramble in Provence and Languedoc," by S. Baring-Gould; "The Country of the Vosges" and "Watering Places of the Norumbega," by Henry W. Wolff; "New China and Old: Personal Recollections and Observations of Thirty Years," by the venerable Arthur E. Moule; and "With Gordon in China," letters from Thomas Lyster, lieutenant R. E., edited by E. A. Lyster, possessed a varied interest and found many readers, as did "Russian Traits and Terrors," a faithful picture of the Russia of to-day, by E. B. Lanin (the collective signature of several writers in the "Fortnightly Review"), with an ode by Algernon Charles Swinburne. "The Melanesians," by R. H. Codrington, was devoted mainly to anthropology and folk lore. "My Canadian Journal," by the Marchioness of Dufferin and Ava, consisted of extracts from letters written home during the six years Lord Dufferin was Governor-General of the province. Cecil Roberts described work and adventure in the States in "Adrift in America." George Broke, "With Sack and Stock in Alaska," and H. W. Seton Karr, "Bear Hunting in the White Mountains," made themselves very entertaining, and Max O'Rell (Paul Blouet) talked of himself as "A Frenchman in America." T. Fitzpatrick took "A Transatlantic Holiday" in the Eastern States, and "Dark Days in Chile" was an account of the revolution of 1891, by M. H. Hervey. Hume Nisbet filled two volumes with the travels and adventures of "A Colonial Tramp" in Australia and New Guinea; "Vicissitudes of Bush Life in Australia and New Zealand" were recounted by Dugald Ferguson; G. E. Mannering went "With Axe and Rope in the New Zealand Alps"; "The Golden Lake," by W. C. Dawe, told the marvelous history of a journey through the great lone land of Australia; Robert Wallace described "The Rural Economy and Agriculture of Australia and New Zealand"; and W. D. Pitcairn narrated his experience in "Two Years among the Savages of New Guinea." "My Three Years in Manipur and Escape from the Recent Mutiny" was thrillingly told by Mrs. Ethel St. Clair Grimwood; "A Month in a Dandi" was the record of a woman's wanderings in northern India, by Christina S. Bremner, and "Young India" was the title given a series of letters written to the "Pall Mall Gazette" during a political tour in India in the winter of 1890-'91 by W. S. Caine. J. J. Hissey went "Across England in a Dog-cart" from London to St. David's and back, and William R. Hughes took "A Week's Tramp in Dickens-land," collecting reminiscences of the "inimitable Boz." According to V. Cecil Cotes, "Two Girls on a Barge" made a trip on the Thames and through some of the canals of England, and R. Brougham enjoyed his "Cruise in Friesland Broads."

The following is the analysis of the book-publishing trade in England during the year, according to the figures of the "Publishers' Circular," together with the corresponding figures for 1890, printed in parallel columns for the purpose of rendering comparison easy. It will be observed that the totals present only a slight difference:

DIVISIONS.	1890.		1891.	
	New books.	New editions.	New books.	New editions.
Theology, sermons, biblical, etc.	555	153	520	107
Educational, classical, and philological.....	615	88	587	107
Juvenile works and tales.....	443	95	343	99
Novels, tales, and other fiction..	881	323	896	320
Law, jurisprudence, etc.....	40	89	61	48
Political and social economy, trade, and commerce.....	87	22	105	81
Arts, sciences, and illustrated works.....	54	19	85	81
Voyages, travels, geographical research.....	183	69	203	68
History, biography, etc.....	294	97	328	85
Poetry and the drama.....	114	74	146	55
Year-books and serials in vols..	318	1	310	6
Medicine, surgery, etc.....	143	50	120	55
Belles-lettres, essays, monographs, etc.....	171	191	131	123
Miscellaneous, including pamphlets, not sermons.....	511	100	589	142
	4,414	1,321	4,429	1,277
		4,414		4,429
		5,735		5,706

LITERATURE, CONTINENTAL, IN 1891.

During the present year literature has flourished, on the whole, and manifested about its usual vigor. The state of political and civil affairs was mostly favorable, and authors and publishers availed themselves thereof with profit in both directions. We give the record, as heretofore, in the alphabetical order of countries on the Continent of Europe.

Belgium.—History and historical research maintain in Belgium the high position of former years. M. Piot, Keeper of the National Records, has printed Vol. VIII of the "Correspondence of Cardinal Granville," who was a somewhat famous ecclesiastic in the Low Countries when religious troubles broke out under Philip II. M. Vander Haeghen, M. Arnold, and M. Vanden Berghe are continuing the publication of the admirable bibliography of the Low Countries, entitled "Bibliotheca Belgica." So valuable was the work esteemed to be that it secured the quinquennial prize of 5,000 francs awarded by the Belgian Government for the best publication of the year dealing with national history. A Jesuit father, C. Sommervogel, has undertaken to supply a work of hardly less importance, to be issued under the title of "Bibliothèque de la Compagnie de Jésus." M. Namèche, the veteran worker in this department, has brought out two new volumes of his large "Cours d'Histoire Nationale," begun in 1883, and now nearly finished. Canon Daris, also a veteran laborer in this field, has added a new volume to his "History of the Diocese and Principality of Liège." The most important contribution to Belgian history is pronounced to be the "Introduction à l'Histoire des Institutions de la Belgique au Moyen Age," by Prof. L. Vanderkindere, of the University of Brussels. The author has brought the narrative down to the Treaty of Verdun in 843. Under the title of "La Renaissance des Lettres et l'Essor de l'Erudition Ancienne en Belgique," Prof. Felix Nève, of the University of Louvain, has collected in a volume essays previously printed on Erasmus, Sir Thomas

More, and some other humanists of the sixteenth and seventeenth centuries, who left marks of their influence on the literature of the Low Countries. Pupils of the state universities at Liège and Ghent have shown zeal and ability in various historical publications, such as the "Quarrel about Investitures in the Dioceses of Liège and Cambray (1075-1107)," by M. A. Cauchie, of Louvain, and the "Election of Pope Clement V," by M. L. Leclère, of Brussels. In connection with these historical notes we must not omit to state that two eminent workers have been taken away by death, viz., Baron de Lettenhove, who was just finishing the ninth volume of valuable records relating to the Low Countries and England during the reign of Philip II, and M. Van Weddinghen, court almoner, and distinguished among the Roman Catholic clergy of Belgium, who was at work to the very last. Weddinghen was in the prime of life, while Lettenhove was seventy-four years old. In political economy M. E. Mahaim, though a beginner, has shown real ability in sketching annals of the colleges of Roman artisans, of the corporations of workmen in the middle ages, and under the *ancien régime*, of the professional syndicates in France, the trade unions in England, the societies of workmen in Germany and Austria, and the professional unions of Belgium. Baron H. de Royer de Dour's book on "Workmen's Dwellings in Belgium," with appropriate plates, was esteemed to be so good that it was crowned by the Royal Academy. M. E. de Laveleye has issued an interesting monograph on "La Monnaie et le Bimétallisme International," and has also brought out new and revised editions of his "Contemporary Socialism" and "Property and its Primitive Forms." M. de Harlez's monograph on "The Modern Philosophical School of China" is noteworthy, as is also Prof. P. Hoffman's volume "Religion basée sur la Morale." The topic is rather new on the Continent, and the author draws material from American writers as to the point of framing a new religion based mainly on morality and the like. The book is practically a supplement to Count G. d'Alviella's "Contemporary Religious Evolution among the English, Americans, and Hindus," published in 1884, and spoken of at that date. A work by Messrs. L. and E. de Taye, on "The Plastic Arts in Belgium," has been considered worthy of the prize of 25,000 francs founded by Leopold II. A superbly illustrated volume on towers and belfries has attracted much attention. In *belles-lettres* "Young Belgium" still stands prominent, and both claims and receives a large share of public consideration. The chief of the school, Max Waller, died a year ago. M. Maeterlinck, a Fleming of Ghent, brought out a play, "La Princesse Maleine," in the summer, written in French, about which the Paris "Figaro" talked very extravagantly, even averring that it was "superior to the best of Shakespeare's"! Literature in the Flemish language continues to flourish in verse and prose. Several works of the year have attained popularity, such as M. Gittens's historical drama of the times of Napoleon I, "De Maire van Antwerpen," M. Styns's little volume "In de Ton," M. Brans's "Gedichten in Proza," etc. M. F. de Potter has done service to archæology in adding a new volume to

his history of the buildings and streets of Ghent. M. I. Vuylsteke's dissertations on the Artevelde, etc., are highly commended by the critics. Prof. J. Vercoullie, of the University of Ghent, has furnished an excellent "Etymologisch Woordenboek der Nederlandsche Taal," in which is proved the revival of Germanic philology, of late languishing in Belgium. The poet of West Flanders, Albert Rodenbach, has been well treated of by M. F. Vanden Weghe, and an industrious school-master near Ghent has written a book on "Medical Folk Lore" of Flanders, said by the critics to be well worthy of its theme. The Willems-Fonds have brought out a capital first volume for the study of popular poetry, entitled "Nederlandsch Liederboek." It contains patriotic and local *chansons* (texts and melodies) from the sixteenth century to the present time, such as songs of the Gueux in revolt against Spanish tyranny, national lyrics of Flanders, Holland, the Orange Free State, and the Transvaal, the song of Ypres, etc. A second volume is soon to appear, containing mediæval ballads, love songs, children's ditties, and the like, under the editorship of M. Florimond van Duyse, a very competent authority on Flemish music.

Bohemia.—Our record of the year shows that there has been more than usual activity in literature in Bohemia. By the side of older schools of thought, designated by the critics as "romantically patriotic and pessimistic," has sprung up a realistic movement of much interest. Lyric poetry, on the whole, is less remarkable than in previous years. The poet V. Jos. Pokorný-Pikulič published a collection entitled "Coming to the Mill with my Little Store," the result of twenty years' toil. The critics give only faint praise to the book, while acknowledging its love of freedom and art. Another poet, Vojtěch Pakosta, in his "Forest Walks," shows greater power, and delineates nature with rare skill and ability. The pessimistic school is represented by Jar. Vrchlický's "Voices in the Desert," similar to the productions of Jos. V. Sládek noted last year. "A Day of Bliss," by the gifted Bohdan Kamiński, evinces deep feeling, but in general is too melancholy in tone for most readers. F. X. Svoboda's patriotic "In our Atmosphere" is sharply criticised as weak in thought as well as in descriptive power. Several of the younger poets are highly praised, especially Klustersky and Kvapil. Emanuel z Cenková's "Eros a Psyche" unites pessimistic and naturalistic tendencies, and Z. Janko-Dvorský's "Floating Clouds" are pronounced to be approximating so nearly to the extreme of naturalism as to be devoid of all poetic illusion or ideal. The most noteworthy realist is A. Sova, who writes under the pseudonym "Ilja Georgov." The critics give him credit for powerful individuality, and much good fruit is expected in due time. Patriotic poems are not numerous or of much account. The pessimistic school has been unusually active. Karel Kucera has published a collection of "Lost Stars," in which are united old Greek legends with patriotic motives and mediæval lore. The critics praised B. Kamiński's tale "Má Tatána," J. Zeyer's "A Tale of Charlemagne," K. Leger's tale in verse, "In Retirement," and M. Cervinka's "Hynek." Works of fiction have been numerous this year and of good quality. "The Three

Votes" is an historical romance by the chief Bohemian novelist of the present day, Alois Jirásek. The period is the fifteenth century, and the story is well calculated to arouse Bohemian patriotism. Shorter historical stories are J. Brann's "In Olden Times" and B. Brodský's "Ze Zruesskych Matrik." Among tales of modern life much praised are: S. Heller's effective story "The Romance of the Battle Field," F. Herites's "Nobility of a Borough," V. Vleck's last work, "The Black Lake," and I. Hermann's realistic story in four parts, "At the Ruined Shop," in the city of Prague. In shorter tales and sketches the romantic school prevails, with realism now and then appearing. These are very numerous, too numerous, in fact, for us to give even titles here. The drama has been enriched this year by several works of merit. "The Bracelet" is a capital comedy in one act, by E. Bozdech, who died suddenly since last year's record. J. Vrchlický's comedy "The Ears of Midas" is highly spoken of, while a tragedy by the same author, "Love and Death," taken from Spanish history, is said to be destitute of dramatic interest. Other productions named with favor are A. Jirásek's "Vojnarka" (Bohemian country life), G. Preissova's "Gazdina Roba" (life among the Slovenes in Moravia), V. Stech's "Gold Rain" (social life), and K. Pippich's "Visionary Greatness." For the most part the verdict is that the drama has been but slightly affected by realism. In the departments of science, philosophy, and theology we have no material of sufficient value to put on record here.

Denmark.—Literary efforts in Denmark this year have been mostly put forth by writers of established reputations. H. Drachmann, who had rather fallen in public estimation, has renewed his popularity by a collection of lyric poems and by a new romance, "Forskrevet." This is described as being remarkable for a masterly picture of the author's self under two personalities, and for keen, rapier-like thrusts at men and things, as well as for pictures of fascinating beauty and perspicuity. Besides this, Drachmann has issued a volume of fresh and entertaining matter, "Tarvis: Tales from the Alps of Carinthia," and a series of sketches, "Trolldtoj" (with appropriate drawings by good artists), of well-known popular superstitions. Indeed, sketches of various sorts form a large part of the year's literary harvest. H. Pontopidan's "Chronicles" and N. Möller's "Occurrences" give clear glimpses into the limitations of life and the depths of the human soul, the former painting more broadly, the latter more minutely and delicately, after the manner of verses which he published two years ago under the title of "A Purgatory." C. Ewald's "Erotik" is said to evince subtle skill in analyzing and depicting love in its different shapes. Thor Lange, L. Petersen, and A. E. Betzonick are spoken of as only in part successful. The number of novels and tales is as large as usual. Of these, the critics praise Capt. P. F. Rist's "Soldiers," a collection of short tales; S. Schandorph's two volumes of tales, "From Abroad and from Home" and "On Journeys"; P. Mariager's "The Queen of Cyrene, and other Antique Tales"; and O. Madsen's "A Hole in the Ice, and other Tales." Several beginners

have tried their hands, but to little purpose. New novels have been published by H. F. Ewald, Holm-Hansen, C. Möller, F. C. v. d. Burgh, J. Meyer, B. Elmgaard, etc. In verse there is nothing demanding special mention. Nik-Bøgh has brought out "Reminiscences and Melodies"; V. Røse, a narrative poem, "Master Dubitans"; C. Richardt, "The Lord's Prayer" (illustrated); E. v. d. Reeke, a new collection of verses, which is rather sharply criticised; and O. Madsen, a beginner, "Wild Wine," which exhibits considerable talent. In the drama, Mrs. E. Gad's new comedies, "A Warning" and "A Silver Wedding," mark an advance; both were received with applause in the theatre. G. Esman's "In the Province" was also successful, and an anonymous comedy, "At Gotham," is praised. E. Christiansen, well known in this department, has published "Idle Tales," a clever comedy, and "Peter Plus," a romantic fairy play. The author who writes under the pseudonym "Woldemar" has issued a play, "Gregers," in which the seventeenth-century people and style of speech are brought to the front. K. Gjellerup's new tragedy "Hermin Vandel" is held to be in measure a failure. "King Waldemar," a lyrical drama, by Anna Erslev ("A. Borch") is a success, and is accompanied by a treatise on Danish historical plays. In history, attention has been confined to Denmark and Norway. One volume only, "The Fall of Robespierre," by L. F. Toft, deals with foreign history. Prof. E. Holm's "Denmark-Norway, 1720-1730," is very valuable. The aged historian F. Barford has begun, in continuation of a previous work, "The History of Denmark, 1536-1670," and R. Petersen has collected a series of "Reminiscences from the Shore of the Sound." Two books add to the war literature of the country, viz., "A Parsonage in Sundevad (Sleswick) during the war of 1864," by N. L. Fejlberg, and "The Chief Physician," by an anonymous writer, an old army chaplain. Many new contributions to history have been made in the form of biographies. C. Blangstrup's "Christian VII and Caroline Mathilde" is well done, and a new life of Christian IV is under way by L. Beering and A. Larsen, handsomely illustrated. The life of the naval hero Tordenskjold has been told once more by P. Ancher. To these may be added "Reminiscences of C. E. Bardenfleth," Minister of Justice and personal friend of King Frederick VII. "Personal Events of a Long Life," by Rev. V. Birkedahl, is valuable for politics, theology, and literature. Timely also are J. Michaelsen's "My Contemporaries," Commodore Wilde's "From Sea and Land," and H. Bang's "Ten Years," containing recent experiences as author, journalist, etc. G. Brandes, who began his elaborate work on "Young Germany" in 1871, gives a sixth volume, in which he concludes his "Main Currents in the Literature of the Nineteenth Century." K. Madsen, a skillful critic, has published the first volume of "Dutch Painting," which is highly commended. Prof. J. Steenstrup has issued a treatise on "Our Popular Ditties of the Middle Ages," giving their true form, age, and æsthetic value. F. Rønning has brought out a second volume of his "Age of Rationalism in Denmark," devoted to Ewald and Wessel. J. Stefansson deals with the English poet Brown-

ing, and K. Gjellerup with R. Wagner. Of new books of travel, favorable mention is made of the "Journey in Four Parts of the World," by Irgens-Bergh (illustrated); "A Trip to Norway," by K. Arentzen; and Capts. Martini and Schoenberg's "Two Danish Travellers on the Congo." In the department of philosophy, of little account this year, we may place on record here, as more or less valuable, "Ethical Inquiries," by Prof. H. Höffding; "Skepticism," by C. N. Starke; "The Philosophy of Hobbes," by E. Larsen; and "Æsthetics and Life," by A. C. Larsen. Two small volumes, in aid of the study and understanding of the Bible, according to more "advanced" criticism, have been brought out, viz., "The Childhood and Youth of Jesus" and "Jesus in Galilee." A volume or two of ecclesiastical controversies have appeared, coming from two theological professors, H. Scharling and F. Nielsen.

France.—Politics have had some though not much effect upon literature this year in France. Students of history proper have been occupied to a large extent with memoirs, journals, etc., in search after facts and sound views and conclusions; while, in what is called pure literature, public sentiment is awakened, and novelists, being tired of psychological fiction, are disposed to return to the older opinion about romance and its proper form. In our last year's record we simply noted that Renan had published Vol. III of his "History of Israel." The volume comprises the prophets and Babylonish captivity. Critics generally are in raptures over the wonderful erudition and profound research of the writer. A few others, who cling to the old-fashioned orthodox view of Bible history, are not satisfied that Renan is any more safe here in his teaching than he has proved to be in his former volumes. M. Taine has undertaken, in his "Origines de la France Contemporaine," to set forth and prove that the *régime* inaugurated by the despotism of Napoleon is still in force, and that he was really "the architect of modern France." Taine's widespread popularity is likely to lead many to adopt his views on the matter. Some of the critics say that he draws extreme, pessimistic conclusions from the proofs of Napoleon's selfishness, which selfishness he holds to be the chief characteristic of the present times in which we are living. M. Ernest Lavisse (noted last year) continues his studies on the origin of contemporary Germany. The new volume contains the history of the youth of Frederick the Great. His pages are lively and picturesque, and can not fail to interest and instruct the reader. Following in the same line of investigation, M. Godefroy Cavaignac has written an able volume, in which he compares the internal evolution of Prussia with that of France during the period of the revolution. M. Cavaignac's contribution is well deserving of examination, especially as he draws the conclusion that in the internal development of Prussia is to be found the secret of her strength. Père Didon's "Life of Jesus Christ" met with unbounded success in France, edition after edition being issued. It has also been translated into English, and is published in two volumes (with illustrations) by D. Appleton & Co., New York. Some of the French critics treat the work rather cavalierly,

from the rationalistic standpoint, but it seems probable that it will survive all attempts to hinder its taking a permanent place in religious literature. M. V. Sardou's drama "Thermidor" has stirred up several writers to discuss the matter anew, and it is instructive to note how much heat and passion are evolved at the same time. M. H. Welchinger has brought out an interesting collection of studies on the revolution, under the title "Le Roman de Dumouriez." The book will amuse many, if it do not really benefit anybody. The Comte d'Hérissou has studied carefully certain points of contemporary history, and writes about them in his own peculiar style. Two volumes are the result, viz., "Romance of the Prince Imperial" and "Man-Hunting" (referring to Algeria and what occurred there). Public opinion seems to be that the count has told his stories well and to the point. A work entitled "Political Caricatures in France during the War, the Siege, and the Commune" is painfully suggestive of that disastrous time in France. A few of the various historical works of the year may here be noted, such as M. E. Spuller's "Parliamentary History of the Second Republic"; Vol. VI of M. Perren's "History of Florence"; "History of Vendée Angevine," by M. C. Port; "The Clergy under the Old Régime," by M. E. Mério; the conclusion of M. Wallon's "Les Représentants du Peuple en Mission et la Justice Révolutionnaire"; M. Lair's "Nicolas Fouquet"; M. V. Fournel's "Men of the Fourteenth of July"; M. Debidour's "Diplomatic History of Europe"; M. Grand-Carteret's curious study of Bismarck. Note also is properly to be made that memoirs and journals have been extensively studied, and oftentimes with excellent results. Among these are ranked highly the Duc de Broglie's published memoirs of Prince Talleyrand, although the critics complain that the memoirs have been curtailed, modified, altered, so as materially to injure their value for the purposes of the history. M. Goncourt's "Journal, 1870, 1871" does not satisfy those best qualified to judge of that grievous time of trial and shame to France, especially Paris. The correspondence of the poet Roucher, published by M. A. Guillois, under the title "Pendant la Terreur"—i. e., during the siege of Paris—is strikingly characteristic of French ideas and mode of action under certain contingencies. It is impossible to give even the names of books of this sort, some of which are of value, no doubt, but a considerable number is nearly worthless. Memoirs of various sorts are pretty much the rage now, no matter, apparently, how disgusting from a moral point of view, how frivolous, or how useless they may be. Louis XV and his abominable licentiousness, Cardinal Richelieu and his shocking shamelessness, souvenirs of kings and nobles more or less vile, or inferior men's secret memoirs—such as these are printed, and must find readers, or they would not be printed. In political studies a work of real merit has made its appearance, viz., "La Politique Française en Tunisie." To this we may add M. A. Lebon's interesting volume, "Études sur l'Allemagne Politique"; "La Vie Politique à l'Etranger," published under the superintendence of M. La-visse, noted last year; M. L. Marillier's "Liberty of Conscience"; and M. J. Reinach's "La Poli-

tique Opportuniste." A translation of Stanley's "In Darkest Africa" has been published in Paris. The critics compare this volume (in favor of their own countryman) with Captain Trivier's travels and experience in Central Africa. A number of minor books of travel has appeared, as well as some studies in geography. Of these we name a few, such as Col. Gallieni's "Deux Campagnes au Soudan Français," M. Borelli's account of his travels in Ethiopia, M. V. Cambon's "Autour des Balkans," M. G. Thomas's "Du Danube à la Baltique," M. L. Léger's "Russe et Slaves," M. C. Diehl's "Excursions Archéologiques en Grèce." Some lively pages of M. Alex. Dumas fils are in print; M. A. Heulhard pronounces a eulogy over Rabelais; and M. Becque has brought out afresh his "Querelles Littéraires." Madame A. Barine has devoted a monograph to the author of Paul and Virginia, in which are several refreshing lights thrown upon St. Pierre's life and character. Among criticisms of artistic and literary works mention may here be made of M. L. Gouze on "L'Art Gothique," M. E. Legouvé's excellent essays on the Education of Girls, M. E. Picard's "Pentalogie Décadente," Dr. Chatelain's "La Folie de J. J. Rousseau," M. A. Sorel's "Madame de Stael," and M. Paul Ginisty's "L'Année Littéraire." Numerous volumes of verse have been produced during the year; some of these are of more than average merit, although the yield as a whole is hardly satisfactory. "Le Règne du Silence," by M. Rodenbach, is praised by the critics; the "Rêves et Impressions" of M. Ch. Nô are said to be in vivid and thrilling verse. Others are mentioned with approval, viz., "Études Antiques," by Messrs. Houbron and Daniaux; "Cendres Chaudes," by M. E. Rouvray; "Croyances," by M. L. de Chauvigny; "Dieu et Patrie," by Mlle. Rousseil; "Poèmes de Flandre," by M. A. Capon. In the domain of fiction Zola seems still to hold pre-eminent position. His latest volume, "L'Argent," is powerfully written, no doubt, but it shows too much of the author's beastly taste to be spoken of except with mingled indignation and disgust. It can be nothing but wicked perversity which leads him to outrage the feelings of all decent people by his course. M. Guy de Maupassant has brought out in his latest book, "Notre Cœur," a psychological study over which the critics are much exercised, and respecting which various opinions are expressed. M. Paul Bourget's new novel, "Un Cœur de Femme," is also of the psychological-study sort, but gives only moderate satisfaction. "Tartarin is Dead!" everybody knows now, and M. Daudet seems wise in having brought his career to an end. Possibly had he not done so, Tartarin might have killed off Daudet. M. Anatole France's "Thaïs" is not a very successful effort to rehabilitate the famous courtesan of that name in ancient days. Stories connected with the theatre and actors and actresses are numerous, but do not need to be named here. M. André Theuriet, a well-known and good writer, has published four novels, all of which are praised by the critics. M. F. Fabre's "Xavière" is said to be a new idyl of very fascinating character, and M. Jean Richepin has collected in a volume picturesque and attractive novelettes, under the title of "Truandailles." M. Henry Rabusson is a

brilliant novelist, as is shown in his last volume, "Hallali!" M. R. de Bonnières depicts a corner of the old Faubourg St. Germain in his "Le Petit Margemont," and M. A. Hermant shows his delight in psychological studies in his "Amour de Tête" and his "Cœurs à Part." In the "Derniers Rêveurs" M. Paul Perret paints, in a lively way, people who despise money and refuse to bow to Mammon. "Le Curé d'Auchelles," by Madame G. Peyrebrune, relates the struggle of a young parish priest against the fascinations of the female sex. The journalist M. Paul Fouchet has published a tasteful novel, "Monsieur Bien-Aimé," which is ironical and severe against hypocrisy and selfishness. Under the suggestive title "Les Larrons," M. H. Le Roux gives a series of painful pictures of the very lowest depths of Parisian society. An old diplomatist, M. de St. Quentin, has brought out, in form of a novel, an interesting description of contemporary Persia, containing new and useful information. Gen. Tchong-Ki-Tong (residing in Paris) has tried his hand at a novel, depicting French life and manners. The critics bestow praise upon his effort. We name a few other novels, but have not space for particulars: M. J. Normand's "Contes à Madame," M. Sutter-Laumann's "L'Histoire d'un Trente-Sous," Madame Rachilde's "Sanglante Ironie," M. P. Adam's supernatural "L'Essence du Soleil," M. J. Dargène's "Sous la Croix du Sud," M. H. Conti's "Gris et Rose," M. P. Zaccane's "Le Crime de la Rue Monge," Comte de St.-Aulaire's "La Vocation d'Angèle," M. H. Lavedan's "Noc-turnes" and "Petites Fêtes." Only a small number of dramatic publications can be named as of any importance. M. Georges Duruy, in a work entitled "Ni Dieu ni Maître," has tried to prove that society can not exist without religion, but in the opinion of most critics with indifferent success. M. M. Sand's well-intended pieces are collected in "Le Théâtre des Marionnettes de Nohant." Reprints have been made of the complete dramatic works of Messrs. P. Meurice and F. Dugué, and a beautiful Provençal play, "La Reine Jeanne," has been published, M. F. Mistral being the author. The record in respect to science, philosophy, theology, and kindred topics is necessarily brief, there having been only scant attention to works of the kind during the year.

Germany.—Political changes in the new empire, consequent upon Bismarck's resignation and the reforming zeal and forwardness of the young Emperor, have had marked influence upon literature in Germany this year. Wildenbruch, one of the chief poets, has offered homage to the new lord and been decorated for his work "Der Neue Herr." A pamphlet entitled "Rembrandt als Erzieher, Von Einem Deutschen" has had a wide circulation, and has roused public opinion and public expectation as to an intellectual recuperation in the empire. Whether this is to come from the people or elsewhere is a question. The present Emperor, with more audacity than discretion, has written himself down as "the only lord in the land," and many hence expect reform to come from above, as Wildenbruch holds. Others, like the writer of the pamphlet above named, expect results to follow in the use of natural means and setting aside traditional and conventional laws and rules. "Young

Germany is quite on fire with this view. The matter at present is too unsettled to predicate anything certain in the near future. Time alone will determine which view is to prevail. Realism has made rapid progress in Germany this year, as is shown in numerous published dramas, containing a large amount of drastic power and pungency. The position of Berlin as the capital city (in the sense of Paris being the capital of France) will have much to do with the future of literature, to which it now gives direction. Munich alone retains power in the domain of art. The realistic drama and novel are in the fore-front, as is made evident by Wildenbruch's "Haubenlerche," the scene of which is laid in a modern Berlin paper mill. The critics speak of the book with much disapproval. As noted last year, dramatists of the "free stage" prefer painful, shocking subjects, such as inherited vices and physical and moral diseases, and they bring forward physiological motives instead of psychological. A man under the curse of fate can find no salvation; for him there is only the inevitable price, the catastrophe. Gerhart Hauptmann's "Friedenfest" is quoted in illustration of the fashion of designating plays as family catastrophes. H. Sudermann, who is said to be the ablest writer of this school, in his effective drama "Ehre" deals with the question of honor as between patrician and plebeian classes, but not very satisfactorily. In this writer's latest play, "Sodom's Ende," the catastrophe naturally excited much sensation, seeing that the Sodom referred to is Berlin of the present day. Critics complain, and not unreasonably, that Sudermann has here gone far beyond nature, and has substituted a pathological diagnosis for a picture of real life, and, further, that "this materialistic tendency to replace psychology by physiology is in danger of converting the action of the stage into that of a sick-room." Hauptmann's latest work, "Einsame Menschen," avoids this substitution, and brings about the catastrophe in the more regular artistic way. The same remark is true of "Schuldig," by R. Voss, author of "Eva" and "Alexandra" (noted last year). The centennial anniversary of the birthday of F. Grillparzer occurred on the 15th of January. He was one of the class of writers of fate-tragedies. Though of Viennese origin and Austrian tendencies, the centenary celebration has shown that as a dramatist he belongs to the whole German nation. H. von Kleist, the Prussophile author of the Prussian Hohenzollern drama "Prinz von Homburg," and Grillparzer, the Austrophile author of the Austrian drama "König Ottocar's Glück und Ende," are regarded as having come the nearest to the ideal of national historical drama set up by Schiller's "Wallenstein." Besides Grillparzer, the poet L. Anzengruber (died last year) deserves special mention. His works have been collected and published, with a biography, by A. Bettelheim. The critics refer to his powerful play (written in 1877) "Das Vierte Gebot" as going the round of the theatres, and as illustrating a peculiar view of the meaning and force of the fifth commandment, quite opposed to the usual teaching of the pulpits. H. Bulthaupt's "Eine Neue Welt," F. Spielhagen's "Aus Eiserner Zeit," and Oscar Blumenthal's comedy "Das Zweite Gesicht"

are spoken of as praiseworthy, if not entitled to entire approval. Comedy is not the strong point of the Germans, according to Boerne. Bauernfeld (just deceased at eighty-nine) was an exception. At a prize competition in Vienna no less than two hundred and sixty anonymous comedies were sent in, and W. von Warteneck received the prize for a play, "Der Ring des Offertdingen," which is pronounced to be "rather a patriotic occasional play than a comedy." Grillparzer's lyrical productions have been brought out in a new edition. These rank very high, and except from Goethe and Schiller, German literature can produce nothing to match them. Titus Ullrich, now a very old man, is a realist of the superior sort, and is named with approbation in this connection, as is also W. Jordan, author of "Epistelen und Vorträge." Other lyrical writers who are spoken well of are D. von Lilieneron, M. R. von Stern (a Socialist regenerator), and A. von Berger, the last being also a refined critic. On the whole, Schopenhauer's pessimism is declining in lyric poetry, yet in the writings of H. Hango it retains all its force. The last poems of the Countess Wilhelmine Wickenburg-Almásy (who died prematurely) demonstrate how much German literature owes to women. Her songs and ballads and legends of the Tyrol, in "Margaretha und Oswald," have not only a realistic tendency, but also natural freshness, with beauty of form. Another lady, also a poetess, Ilse Frapan, deserves to be ranked with the one just named. This last is further in good repute as a novelist. The "Musenalmanach" of Goethe and Schiller's time has been revived, and is fairly received. The critics say that for the present epic poetry is dead, and in its place we have the "narrative poem," or novel in verse. Max Haushofer's epic story "Die Verbannten" illustrates the statement, as does also Joseph Lauff's "Song of By-gone Days" in Cologne, with its melodramatic ending. Count Adolph F. von Schack, the clever translator of Firdusi, falls below his proper level this year. Emilie Ringseis has published a work for religious Christian people, consisting of hymns that set forth the worship of the Madonna. The leaders of the novel—i. e., Spielhagen, Ebers, Wilbrandt—have paused for the year. Gottfried Keller has died, much regretted. He was a master in the novel of educational tendencies in the style of Goethe's "Wilhelm Meister," as well as a miniature painter in the manner of Jean Paul. A young countryman of Keller's, Walter Siegfried, has brought out a novel "Tino-Moralt," and seems to bid fair to occupy worthily the older man's place. The realistic novel, the critics think, is doomed, and Theodor Fontane is vigorously working to this end, as his latest novel, "Unwiederbringlich," shows by its suggestive character drawing, witty dialogue, etc. The veteran Rudolph von Gottschall's latest book is "Steinerne Gast," a historical novel of much ability. Mlle. Lola Kirschner, a very gifted lady, has published two books, "Heil Dir, mein Oesterreich!" and "Heil Dir im Siegeskranz," both highly praised by the critics. Her Austrian fellow-countrywoman Bertha von Suttner, in her last novel, "Vae Victis!" has depicted war's horrors and outrage at this day with great power. A Prus-

sian lady, Louise von François, is author of an excellent novel, "Letzte Rottenburgerin." The historical novel is well represented by Ernst Wichert, favorably known as novelist and dramatist, in "Tillemann vom Wege," and by the popular August Becker in his "Die graue Fette." The last novel of Karl Emil Franzos, "Judith Trachtenberg," may fairly be ranked in the same class. To the social novel belong Hermann Heiberg's "Drei Schwestern," and Conrad Alberti's "Das Recht auf Liebe." Short stories are popular, such as Paul Heyse's "Weihnachtsgeschichten," Ilse Frapan's "Enge Welt" and "Psyche," Hans Hopfen's "Neue Geschichten des Majors," J. J. David's stories, collected under the title of "Die Wiedergeborenen," have a touch of realism and are excellent in style and execution. Hans Hoffmann's new satirical stories, "Das Gymnasium zu Stolpenburg," and W. Raabe's "Stopfkuchen: eine See- und Mordgeschichte," display the humorous element to a large extent. In history nothing has been produced to be compared with H. von Sybel's "Geschichte der Gründung des neuen Deutschen Reichs," noted last year. A work of value, like to Ranke's "History of the Popes," has been published by Ludwig Pastor, entitled "Geschichte der Päpste der Renaissance." Ranke, though a Protestant, wrote with great fairness and impartiality. The present writer, though a Roman Catholic, is much praised as exhibiting the same qualities. Other works on history from an ecclesiastical point of view are J. Janssen's "History of the Reformation," A Baumgarten's "Leben Goethes," and F. X. Kraus's "History of Christian Art." Works by Wertheimer, Huber, Krone, and others are prepared from the Austrian outlook. In biography and memoirs Ranke's "Zur eigenen Lebens-Geschichte," edited by A. Dove, is chiefly a collection of materials. A suitable biography is yet to be written. Alfred von Arneth, historian of Maria Theresa and Prince Eugene, has brought out "Erinnerungen," which comprises the first thirty years of his life. It is said to be a worthy counterpart to Grillparzer's autobiography. Personal recollections of Alexander von Hübner, an Austrian statesman, cover the period of the revolution (1848), and are valuable as well as interesting. A third Austrian statesman and historian, Freiherr von Helfert, takes as his theme the revolution planned as early as 1815, when Italy came into Austrian hands, and carried out in 1821. The life of Karl von Hase, who gained the *sobriquet* of "the Protestant Pope" on account of his struggles in behalf of rational enlightenment and religious toleration, is appended to his collected works. J. Minor has added a second volume to his excellent biography of Schiller, and A. Bettelheim has published a life of the late dramatist Anzengruber. Several volumes of correspondence and letters have also appeared, and are noted as valuable. In philosophy and theology there is next to nothing of which to make mention here. Materials at hand do not furnish any help whereby to explain the fact, and we must leave it to the reader's judgment for himself.

Greece.—The number of books published this year in Greece has not been large, owing apparently to the fact that the weekly and monthly

periodicals as well as the daily papers absorb the larger part of what is produced in literature and science. Good evidence as to this is furnished by noting that everything written thus far about the newly discovered "Treatise on the Constitution of Athens," even emendations proposed, has appeared in the daily press. In philology the foremost production has been the long-expected "Patmian Library" of M. J. Sakellion, Keeper of the Manuscripts in the National Library. It is very valuable, containing a minute description of the 735 manuscripts in the library of the monastery on the island of Patmos and an appendix of *anecdota* derived from them. Besides this interesting work may be mentioned the "Notes, Critical and Exegetical, on Æschylus," by A. Zakas, and the "Emendations on Greek Authors," by G. Zekides. Constantine Rhados's volume is on a controverted question, "The Struggle regarding the Greek Language in France." The writer is a zealous purist, and his work well worth consulting. "The Chian Analekta" of Constantine Kanellaki holds a position about midway between philology and history. It deals with manners and folk-lore in Chios, golden bulls, seals, etc. The "Philological Meletemata" of S. Valvis contains essays, literary and æsthetic, on both old and new Greek literature. Manuel Gedeon has published two volumes on historical studies, viz., "Tables of the Patriarchs of Constantinople," in biographical form (issued in numbers), and two volumes containing "Canonical Orders, Letters, Decisions, and Statutes of the Patriarchs of Constantinople," a compilation of interest and value to students of ecclesiastical history. G. Papadopoulos has furnished a monograph, "Contributions to the History of our Customary Church Music," in which is a good deal of new matter; and Antonios Mompherratos, another production of value to students, "Right of Inheritance possessed by the Clergy and Monks in Greece and Turkey." Vol. IV of "Universal History," written by Anastasios Polyzoides (deceased), has been supplied by G. Kremos, his associate, containing the history of Greece from 1821 to the present time. The lecture of Prof. George Mistriotis, Rector of the University, on "The Causes of Greek Civilization, Ancient and Modern," and D. Eliopoulos's "Monograph on the Greek Statesman John Kolettis" (died 1847), well deserve mention here. Geography and travel are fairly represented this year. The most important works are, "The Political Geography of Cephallonia, Ancient and Modern," by A. Miliarakis, including in the volume Ithaca and the adjacent islands, and "Statistics of the Population of Crete," by N. Stavrakis; two volumes concerning the Peloponnesus, viz., "On the Other Side of the Isthmus," by S. Paganelis, and "A Journey from Patras to Tripoli," by Dr. Koryllos; also, a collection of excellent essays, by J. Balabanis, giving impressions of travel in "Asia Minor." *Belles-lettres* for the most part has been confined to the periodicals, such as "Hestia" and "The Week." A few tales have appeared separately, of which one may be named, "Nicolas Sigalos," by G. Xenopoulos. In poetry the best thing of the year, the critics say, are the posthumous verses of Aristoteles Valaoritis, which appear in a second edition of his poems, edited by his son. The lyrics in the

volume are said to be real gems. In connection with this volume as worthy of regard we may mention G. Marcora's "Poetical Works," G. Drosinini's collection of verses, and the "Rural Idyls" of Constantine Krystallis, a promising young Epirote.

Holland.—The third part of Dr. Pierson's great work "Hellas" is praised without stint by the reviewers. As was stated last year, Dr. Pierson is a writer who never tires the reader, and his criticisms on the Greek poets and their writings are marked by freshness, point, deep penetration, and an admirable entering into the spirit of Æschylus, Sophocles, Euripides, Pindar, and others of imperishable renown in ancient Greece. Dr. Kramer, in a biographical sketch of Mary Stuart, wife of William III, describes her as a pious, noble woman. The volume gives evidence of care and research, and is quite reliable. Another posthumous work of Jorissen's "Historische Studiën" has appeared, edited by Prof. Matthes. The papers on Talleyrand, Metternich, Guizot, and Peel are said to be very good. Dr. A. v. d. Linde has contributed a new volume on Servetus, in which he is very severe on John Calvin and the motives which led to his course in the matter. The critics speak in praise of a number of historical productions, such as Dr. D. C. Nyhoff's "Staatkundige Geschiedenis v. Ned."; Mr. Theall's "Korte Geschied. v. Zuid-Afrika" (1498-1835), which has been translated into English; Mr. Sillem's biography of D. v. Hogen-dorp; and Mr. F. S. A. de Clercq's "Bydr. tot de Kennis der Res. Ternate." The history of provinces and towns, as well as of morals and customs, is decidedly popular. Prof. Blok tells a good deal about Friesland's soil, trade, people, church, etc. (700-1300); Mr. Bondam and Mr. Sloet make clear the history of Guiderland; Dr. Krul has compiled a very amusing book about physicians, etc., and Dr. Sepp, a very learned one about the life of Protestant clergymen in olden times. A good account of old Dutch marriage customs is to be found in De Roever's "Van Vryen en Trouwen." Dictionaries, especially "Het Woordenboek," are making good progress. Beets's "Poëzie in Woorden" is much praised, as are also Mr. v. Hoogstraten's "Studies en Kritieken" and Dr. de Luzac's "De Ned. Sentimenteele Roman." The letters of Prof. Cobet, the distinguished Greek scholar (died last year), are excellent in tone and spirit. Notice may here be taken of the tendency, in Holland as well as in England, to associate insanity with genius, as if there was some necessary relationship between the two. This is seen in certain letters of Dekker and of Bilderdijk recently printed, and also in various modern novels tinged with like gloomy ideas, such as De Meester's "Een Huwelÿk," Lapidot's "Moderne Problemen," Josephine Giese's "Gevloekt" (i. e., "Cursed"), etc. Several Indian novels have appeared. Anne Foore's "Bogoriana" (a posthumous work), Margadant's "Drie Jaren," and Jaeger's graphic sketches of soldier life in Atchin, entitled "Van Ginds," are mentioned with approval. Some good historical novels and novelettes have been published, and some excellent pieces for the stage, but do not require special mention. Lyrical verse is conspicuous, so to speak, by its absence this year. Possible exceptions are some nice poems by Priem

and Koster, a few pieces of Gorter (rather hard to be understood), and Van Eden's "Ellen," very sad, but beautiful. Critics protest against what they censure as a prevalence of morbid feelings among writers of the day. In the departments of philosophy and theology we have no record of new publications this year. This was also the case in 1890, and the outlook is not encouraging, so far as Dutch scholarship is concerned. Two deaths may here be noted, viz., Mr. de Veer and J. E. Sachse, both of excellent repute in letters.

Italy.—They who are in position to be best informed say regretfully, as the sober truth, that a state of unusual languor pervades literary life in Italy at the present time. The reading public is very small, and, as foreign rather than native books are read by the people, naturally authors have small inducement to ply their vocation. Some intellectual activity, of course, there is, but the critics declare that this is mostly devoted to a minute analysis in physical, historical, and philological science, and that there is no synthesis or adequate comprehensible result of all these researches. We give accordingly the best account in our power of the year's production. In poetry, if we may credit Eugenia Levi, in a pleasant book published in Florence recently entitled "Among our Living Poets," there are worthy of note (along with much of mediocre character) the productions of three ladies, viz., Brunamonti, Countess Lara, and Giarre Billi, and among gentlemen the publications of Neucioni, Graf, Mazzoni, Fogazzaro, and a few others. Dialect poetry also has two or three good representatives. Signor Carducci has published one new poem this year, entitled "Piedmont." It is marked by lofty style and a glowing strain of thought. It is monarchical in its spirit, and recounts the part taken by Piedmont in the renaissance of Italy. The names of several others are given as worthy of mention, viz., Guido Mazzoni, Giovanni Marradi, Guido Monaschi, G. Targioni, Tozzetti, and Camillo Cecchucci. A translation from the Sanskrit of a short love poem, "Meghadûta," has been made by G. Morici, which is said to be excellently worked out. In the way of novels and romances not much has been accomplished. A. G. Barrili, a prolific writer, has published two novels, "Amori Antichi" and "Rosa di Gerico." Salvatore Farina, a good writer in past years, has brought out "Più Forte dell' Amore" and "Vivere per Amare," which are rather sharply criticised. It will suffice to give the names of some others out of a large number who have achieved moderate success, such as A. S. Novaro, Onorata Fava, Bruno Sperani, G. Verga, and A. Giacomelli. A young novelist, De Roberti, is rather anxious to rival Zola in the Frenchman's abominations, but Zola is as yet far ahead. G. d'Annunzio, in his last two novels, imitates Russian ones, and has been scolded therefor. Annie Vivanti (named last year as a poetess, introduced by Signor Carducci) has written a novel, "Marion, Artista di Caffè-Concerto." The critics censure the book as a representation of low life badly set forth. In Italian dramatic literature poverty largely prevails. There are some signs of improvement. Camillo Antona Traversi, a very fertile writer, has furnished a comedy, "Tordi e Fringuelli," which is said to be

merry and brisk, one of his best. Mario Praga, son of a poet, aims higher in his two dramas, "La Moglie Ideale" and "Le Vergini," and has met with good success. Gerolamo Rovetta, in his "Marco Spada," has gained equal success. Alessandro d'Ancona has issued two large volumes on the "Origini del Teatro Italiano." It is a work of real merit. Historical sciences have yielded almost no fruit of late. There are numerous workers, but they furnish very little for the press. All we can name now are Ferrai's "Lorenzino dei Medici e la Società Cortigiana del Cinquecento," T. Masserani's "Cesare Correnti," D. Mantovani's "Lettere Provinciali," and Luigi Rasi's "Libro degli Aneddoti." These two latter are said to treat pleasingly many and various literary and artistic questions. In other departments of history and in philosophy and religion we have nothing of moment for this year's record.

Norway.—Critical observers affirm that at present there is "a superfluity of scribblers" in Norway. Perhaps the dictum is too severe; yet, as far as the record goes, there is more of truth than poetry in it. We give the best account we can, under the circumstances, by judicious selection. Henrik Ibsen (who produced nothing last year in dramatic literature) has created a great sensation in London as well as Christiania, by his "Hedda Gabler." It carries the mark of genius with it, and has a sort of antique beauty, a feiture, by the way, not seldom lost sight of by Ibsen, and a sort of culture in which he plainly takes delight. Along with his supposed naturalism, there is found to be a kernel emphatically idealistic. Like an inspired prophet, he continually is foretelling the advent of a new social gospel. Jakob Bull stands in marked contrast to Ibsen. His drama "Uden Ansvar" is meant to controvert Ibsen's theory as to heredity. The critics praise it heartily. Three of the gentler sex have tried their hands in this kind of literature, and have failed of success. Their names are Laura Kieler, Asta Graah, and Veltie Vislie. Jonas Lie's new Christmas story, "Onde Magter," is attractive and pleasant. This is more than can be said of A. Kielland's "Jakob," which is complained of as having too much of the satirist and polemic in it. Madame Amalie Skram, in her romance "S. G. Myre," gains but a modicum of praise, while her superior ability is fully acknowledged. Among novels of the year, Knut Hamsun's "Sult" is said to be a remarkable contribution to the physiology and psychology of hunger. The critics call it "an interesting phenomenon," despite its defects. Arne Garborg's contribution this year, "Kolbotnbrev og andre Skildringer," is a species of autobiography, and is much praised by the critics. Jakob Hilditsch's new collection of short stories is very good, as are also K. Janson's and R. Johnsen's similar collections. Both C. Flood and J. W. Flood have issued fresh series of sea stories. Dr. Oscar Tybring has brought out a very pretty book, "Smaa Historier og Erindringer." Sofus Aars's "Skovinteriører, Naturskildringer" is excellent in picturing the chase and animal life; as is also the painter Kittelsen's "Fra Lofoten," with illustrations. Among young writers may be named Erik Lie, son of Jonas Lie, Arne Dybfest, and Gabriel Finne.

These have done well. Works in verse are but poorly represented. Bjørnstjerne Bjørnson's "Digte og Sange" is said to be the only book of its kind worth recording. The "Samlede Skrifter" of the romantic lyricist Andreas Munch, lately deceased, is at length completed. The sixth and last volume of A. O. Vinje's "Skrifter i Utval" came out this year. Vinje (died some twenty years ago) was a sort of Norwegian Heinrich Heine, and a staunch advocate of national purism. The volume has been well received. Ernst Sars, the historian, has published Vol. IV and last of his great work "Udsigt over den Norske Historie." It was begun twenty years ago, and is a work of permanent value. Ö. Överland's illustrated "Norges Historie," Vol. IV, has appeared; another volume will complete the work. Literary history offers little of any moment this year. A collection of brief biographies has been published by J. Utheim, entitled "Otte Forfattere." L. Dietrichson has begun to publish a work dealing with the history of art; it treats of that peculiar type of Norwegian wooden architecture common in the Middle Ages, and known as *Stavkirker*. Prof. M. J. Monrad has published Vol. II of his "Æsthetik," treating of art and artists from the traditional German metaphysical point of view. Two youthful philosophers, C. A. Bugge and H. C. Hansen, have contributed to the literature of the year. The former has dealt with the morality of the theory of development, and the latter, under the title "Moral, Religion og Videnskab," has published a treatise to which had been previously awarded the Crown Prince's gold medal. A biography of Ole Bull, known throughout Europe and America as the Norwegian violinist, has been published by Oodmund Vik. Dr. S. Ibsen (son of the poet) has contributed a political treatise on "Unionem Mellem Norge og Sverige," and H. Pettersen has produced a bibliographical work, entitled "Anonymer og Pseudonymer i den Norske Literatur, 1678-1890."

Poland.—Something more than a year ago the remains of Mickiewicz, the greatest of the Polish poets, were brought from Paris and interred in the cathedral at Wawel, near Cracow. A year later, i. e., May 3, 1891, the centenary of the so-called Constitution was celebrated with much rejoicing (except in Russian Poland). The native critics speak of these occurrences as not only important, but also as having had an influence for good on the literary activity of the year. The services of the great poet were freely commented upon, and the labors of those noble men who sought to infuse new life into their country were gratefully remembered. The volumes, tracts, and pamphlets which were issued fully substantiate this statement. Henryk Siemkiewicz, eminent among Polish writers, has written a psychological romance, "Without Dogma." The book is attractive, the style masterly; but the expected effect in molding public opinion has not yet been attained. A. Mankowski, in his "Count Augustus," deals with the same theme, and with less success. The Poles do not seem to take kindly to what is felt to be an imitation of foreign writers. Madame Orzeszko treats of a profound ethical sentiment in her tale "The Worshipper of Might," and her "Fury," from an artistic point of view, is the

best thing, the critics say, she has ever produced. Marian Gawalewicz, another novelist, has secured at an early age a high position among writers of fiction in a book entitled "The Second Generation." Adolf Dygasinski has given, in his "M. André Piscalski," a truthful and original portrait of life among the nobility. The same writer was sent out to South America to investigate the condition of the Polish emigrants there, and in his "Letters from Brazil" he gives a gloomy picture of what he saw and met with. A very gifted and prolific writer, Mlle. Rodzewicz (noted last year), has published, besides "Tales" and "Silhouettes," two larger works, "The Grey Dust" and "Blue Blood." The latter is charged with being an exaggerated picture of aristocratic circles. Similar complaint is made of A. Krzyzanowski's "Two Streams," which, however, evinces genuine faith in the ideal and in sincere patriotism. Szymanski's second volume of Siberian "Sketches" is pronounced to be hardly equal to the first. Madame Kownicka's tales "My Acquaintance" are excellent in spirit and sympathy with the weak. A few other writers are spoken of with approval, as J. Turczynski, who tells about the Herculi in East Galicia; Naganowski, who gives a glorification of "Mighty England"; and A. Krechowicki, who furnishes a story of the fourteenth century entitled "The Grey Wolf." The drama has not flourished this year. A few novelettes have met with success, such as Sewer's comedy "M. le Maréchal," Walewski's "The Grasshoppers," Koziebrodzki's "The Representative of Messrs. Müller & Co.," etc. Poetry seems to be in a more flourishing condition than the drama. There are several young aspirants for fame. Of these, Franc Nowicki has won praise for his volume of "Poems." Another young author has done real service in translating the "Luslads" of Camoens. W. Wysocki's volume "Oksana" is marked by lively feeling and good principle, and Kasproicz's tales of peasant life are excellent. Stefan z Opatowka has brought out "Elegies and Sonnets," and a Jew at Warsaw has published the first part of a rather queer mixture, entitled "The New Messiah." In history we note the "Heraldic Studies" of Anton Malecki, an able writer, and Prof. W. Abraham's "Organization of the Church in Poland." The "Proceedings" of the second congress of Polish historians, held at Lemberg last year, contain valuable material for historical purposes. A. Szezepanski has written a lively sketch of the national hero Kosciusko. The first volume of the "Biography of Adam Mickiewicz," by his son, has appeared and been well received. Count Lanckoronski has given an account of a journey in Asia Minor for archaeological and ethnographical purposes, under the title of "The Cities of Pamphylia and Pisidia," and Count Joseph Potocki has narrated his experiences, such as they were, in the East, in his "Notes of a Sportsman in India." The Polish Tatra Mountains have been illustrated with pen and pencil by Witkiewicz, the painter. He is also author of a meritorious work on "Our Art and Criticism." Other subjects we must perforce pass over in silence.

Russia.—The tone of despondency among the critics in regard to literature in Russia continues much the same as was noted last year.

They hold that "the barrenness of Russian literature is merely a reflection of the emptiness of daily life" as it exists in the empire. Count Tolstoi is as much a puzzle as ever, and the majority are at a loss what to make of or do with him and his peculiar theories and practices. Needing fresh ideas and new impressions from the outer world, intelligent Russians look abroad for sources of inspiration. Tchekhoff travels into Asia, Korolenko wanders along the Volga, and Gleb Ouspenski is found in the Caucasus, Constantinople, or Siberia. They do not, however, bring from distant travels exotic pictures of nature, but only the old groans over prevalent social diseases. Tolstoi's school of quietist self-renunciation exercises a certain influence because of adopting a sort of Christian socialism, which after all will never gain any great success in Russia. The leading critics, like Mikhailovski, Shelgounoff, or Skabitchevski, either forsake their legitimate field of activity, or turn to the past and write reminiscences. Thus Mikhailovski reviews the character of John the Terrible; Shelgounoff appends to his published works "Recollections of the Past and Present"; and Skabitchevski publishes a "History of Modern Russian Literature (1848-1890)," in which the writer of memoirs becomes a historian. These publications furnish printed material for a history of the celebrated movement of the "Sixties," which one not in the inner circle of Russian literature finds it difficult to understand. "Men of the Eighties" designate the younger class of writers, and the controversy between these and the older occupants of the field offers much room for reflection on the part of the student of Russian literature. Another literary controversy has been between the liberals and the "Narodniki" or peasant worshippers. The latter seemed to be possessed with the notion that agrarian socialism is the *summum bonum* of human life, while the other party desires culture and proper use of capital. The dispute has been eager and waged with energy; but neither of the contestants appears to have satisfied any but those who believed as he believed. In *belles-lettres* Potapenko, a young writer who made his *début* ten years ago, has attained remarkable success. He has published this year three productions, and made a collection of his works in two volumes. The critics give long and careful reviews of his books, and delight to point out his admirable skill, his delicacy of touch, his keen observations, his deep feeling. Potapenko's "In Actual Service," "Common Sense," "Secretary of his Excellency," and "Never" are said to illustrate his ability to the full extent. Stanukovitch's "The First Steps" and Borboruikin's "Grown Wiser" are worthy of mention. Karonin satirizes Tolstoi and his peculiar gospel in "The Teachers of Life" and "A Borsky Colony." Count Tolstoi's influence is said to be on the wane in Russia. The poet A. Fet (Shenshin), who belongs to the conservative camp, has published two volumes, entitled "My Recollections (1848-1889)." There is said to be, along with a good deal of senile gossip, much entertaining matter in these volumes. The diary of Nikitenko, of St. Petersburg, professor and censor, is being published in a Russian periodical. The diary abounds in interesting ma-

terial for the history of Russian censorship and the ministry of public instruction for the period of the fifties and the sixties. The aged philologist Prof. Bousluyev is also writing his reminiscences, which reach back to the thirties. Note here may be made of Vengeroff's great "Critico-Biographical Dictionary," which has reached to half of the letter B. In philosophy there is nothing remarkable this year. B. N. Tchitcherin carried off the prize for the best essay on Comte's classification of the sciences. Prof. Redkin, at the age of eighty-two, has just died. He, like Tchitcherin, was an old Hegelian, and was about to finish the publication of his lectures (seven volumes already have appeared) on the history of legal philosophy. Worthy of mention here are P. Kaptarev's "History of the Soul: Outline Sketches of the History of Mind," A. Andreyevski's "Genesis of Science, its Principles and Methods," and Lessevitich's "Scientific Philosophy." Historical works of the year have been chiefly devoted to recent times. Vol. II of Bilbasoff's "History of Catherine II" is ready for publication (waiting on the censorship). Madame E. Stechepkin is bringing out interesting sketches of the life of an "Old Land-owner at Home and in the Service" during the eighteenth century. "The Archives of Prince Th. Kurakin" are considered valuable for the period of Peter the Great; Vol. I is now in course of publication. The Imperial Russian Historical Society is bringing out volumes of dispatches of foreign ambassadors to the Russian court during the eighteenth century. Senator N. P. Semenov has reached nearly the close of his work on "The Emancipation of the Peasants in the Reign of Alexander II." It is elaborate, full, painstaking, and reliable. A work has just appeared, by A. Exemplyarski, on "The Grand Dukes and Princes Appanage of Northern Russia during the Tartar Period (1238-1505)," two volumes. Ilovaiski has published Vol. III of his "History of Russia," devoted to the sixteenth century, which has received a good deal of adverse criticism. Butzinski's "Colonization of Western Siberia in the Beginning of the Seventeenth Century" and Shlyapkin's "St. Demetrius Rostoffski and his Time" (1651-1709) deserve to be named here. A new historical society has been founded, and it publishes a "Historical Review" which gives promise of well-earned success. In art and archæology has appeared Vol. III of "Russian Antiquities recorded in our Art Monuments," by Count Tolstoi and Kondakoff. The volume is regarded as a great acquisition for this department. Vol. IV and last of "Transactions of the Sixth Odessa Archæological Congress" has been published. Other volumes relating to "Eastern Antiquities," edited by M. Nikolski, have been issued; also two volumes of "Materials for the Archæology of the Caucasus." Discoveries on the Orkhon in Mongolia are noted as of special interest. Western arts have received proper attention in the "Complete Collection of the Engravings of Rembrandt," edited by Rovinski, and Vol. I of a new book, entitled "Italian Art in the Renaissance." Ethnology gets its fair share in a new periodical, "The Living Past," and in several published volumes on the subject. Folk-lore and kindred topics

attract much attention. In political economy the work of Behrendts, "The Political Economy of Sweden," Vol. I, comes down to 1808. L. V. Khodski's researches on "Land and Agriculture," two volumes, are very interesting, especially in connection with economic conditions of the Russian peasantry. A. Philippoff's work on "The Punishments and Legislation of Peter the Great in connection with his Reforms" is equally interesting. Mention may properly be made here of V. Sudeykin's book on the "State Bank" and its activity, I. I. Yanjul's "Fundamental Basis of Financial Science, the Doctrine of State Revenue," and Levitsky's "Problems and Methods of the Science of National Economy." Dril, who belongs to the anthropological school of criminal physiology, propounds in his latest work (as in his two preceding books) his theory of "Psychophysical Types in connection with Crime."

Spain.—The Royal Academy de la Lengua, which has been rather languishing of late years, seems to have waked up and applied itself vigorously to its proper vocation. The long-expected work attributed to King Alfonso X, "the Learned," as he is called, entitled "Las Cantigas de Santa Maria," has been published in two folio volumes at the expense of the Academy, and with an exhaustive preface by the Marquis de Valmar. The Spanish *literati* are not at one as regards the authorship of the book, devoted to the praise of the Madonna. The prevailing opinion among the critics is that it was compiled, like the Code of Laws and other works, by order of the King. In any event, however, the Academy deserves much credit for publishing one of the most remarkable literary monuments of the Middle Ages. The first volume of the complete works of Lope de Vega has made its appearance. The editor, Don M. M. y Peñalayo, has prefixed a new and valuable life of Lope, written by Don C. A. de la Barrera, an author of good repute. The Royal Academy of History has also been very active. A third volume of the Chronicle of Catalonia has been published, relating to the famous rebellion, 1641-'60; and portions of a Latin history of Ferdinand and Isabella, by Gonzalo de Ayora. To this a learned preface has been supplied by C. F. Duro. Other original papers and contributions by academicians afford the artist and antiquary ample matter for study and examination. The collection of "Inedited Documents" has reached its ninety-ninth volume, which gives an account of Vincart's campaign in Flanders (1637) and a short chronicle of John II, of Castile, printed for the first time. The volumes preceding, from the eighty-eighth onward, are filled with matter equally interesting and important for purposes of national history. Numerous books relating to America and old Spanish colonies have been reprinted this year, a further proof of what before has been stated, that more books respecting America have been published during the last half-century than in three preceding ones put together. Besides the well-known collection "Documentos Inéditos de Ultramar" and its continuation by the Academy, a new one has been started, entitled: "Colección de Libros que tratan de America," of which two volumes have appeared, one on the conquest of Peru, by F. de Xerez, a reprint of the first edition of

Seville (1534), the other about the Amazon, by Father C. D. Acuña (1641), an equally rare volume. New papers are from the pens of well-known writers, F. Duro and D. M. Jimenez de la Espada, on points of interest. Books and pamphlets relating to America are numerous, in view of the approaching quadricentenary of the discovery of the New World by Columbus, which is to be held in Madrid in 1892. The Seville bibliophiles have lately brought to light an old work, "Historia del Nuevo Mundo," by Father Bernabé Cobo, of the order of the Jesuits (1653), of which Vol. I has been published. Provincial history and topography have received less than the usual share of attention this year. Biography, however, has made some progress. In this department we may name here a life of the first Duke of Ossuna and founder of the university, D. Pedro T. Giron; "Life and Writings of the late Don V. de los Rios," known as author of a life of Cervantes, by Luis Vidart; a life of Loyola, of little value; and "Biographical Dictionary of Catalan Writers," by Molins. The Duchess of Alba has aided in this matter by publishing letters and documents selected from the archives of her house, throwing light on national history from the fifteenth to the seventeenth century. Works on art have been scarce this year, and nothing of special note has appeared. In political sciences, besides some pamphlets, the Duke de Ripalde has published a larger work under the title "El Problema Social y las Escuelas Políticas." In bibliography several works, mostly prize essays, have been issued, such as a "Biographical and Bibliographical Dictionary of Authors, Natives of Burgos," by M. Añibarro, and "Catalogo Razonado de los Libros impresos en Madrid en el Siglo XVI." Very little is to be said of poetry, lyric and dramatic, or of light literature in general. Neither Zorrilla nor Nuñez de Arce, Campoamor, nor M. Palacios has done anything this year. The drama is languishing, and with the single exception of the two brothers Echegaray, who still struggle on, there is not a single playwright worth naming. D. José Echegaray has produced two comedies of the light sort, like the French *vaudeville*. On the other hand, novel writing seems to carry the day, and all kinds of stories, historical, moral, or satirical, are appearing, especially in the periodical press. At the same time it is only fair to state that E. P. Bazan, P. Galdós, Pereda, Picon, and others show that novel writing has much improved. A novel by a Jesuit father, entitled "Pequeñeces," that is "Trifles," has gained wide success. It is powerfully written, the critics say, by one who is a journalist of first-class reputation, and at one time a pupil, friend, and admirer of the celebrated Cecilia Bohl de Faber (pseudonym Fernan Caballero). In political ideas the book is at variance with predominant opinions just now, and Bazan and Bobadilla have held up to ridicule this violent satire on the Spanish aristocracy during Amadeo's short reign.

Sweden.—Last year we omitted Sweden from our record, owing to the fact that there were no materials at hand for giving an intelligible account of progress in the year 1890. This year we are glad to be able to say something to the purpose, although it is largely confined to one

topic. Some good novels have been written in 1891. The "Young" Swedish school has fairly risen to the necessity of the case, and has passed beyond the period of short sketches and contributions to Christmas annuals. August Strindberg, the Zola representative, is the most prominent figure in Swedish prose fiction, a man of great artistic and literary gifts, possessed of a marvellous style, firmness of touch, and quite too fond of diatribes against the gentler sex. His last book, "I Hafsbandet," "On the Island Fringe," is characteristic of the man. He has been reading Nietzsche, a German prophet, and reproduces in fiction his teacher's theory about superhuman being and its working. From the account given in reviews, the book is hardly to be pronounced either pleasing or profitable to ordinary readers. The younger men have profited by watching Strindberg's style without adopting his peculiar views as to life and conduct. Tor Hedberg's "Ett Eldprof," "A Test of Fire," is noted as a psychological study also, turning on the conflict between light and darkness, love and growing insanity in a young man of letters, pursued, as he thinks, by an implacable enemy. The story, on the whole, is painful and morbid in treatment, yet touching as a picture of the influences that are crippling intellectual life in Sweden. Another of the young masters of style is Axel Lundegard, who is much praised for conciseness and clearness, conjoined with admirable lightness of touch. His last book is entitled "La Mouche: the Story of a Death-bed," in which he tells with deep tenderness the story of the poet Heine's last days in Paris. Every student of Heine recognizes who "La Mouche" was. Great sensation has been roused by some chapters of an unfinished story, "Gösta Berlings Saga," by Selma Lagerlöf, describing in a highly imaginative way the wild, quaint life in Vermland some sixty years back. Of shorter stories, the best one is decidedly yet powerfully naturalistic, by Gustaf af Geijerstam, entitled "Fadernord," the tale of a murder of a peasant of Oland by his wife and sons. The analysis and description throughout display insight and force. Worthy of note is a good "Aftermath" of Victoria Benedictson's shorter studies. Mrs. H. Nyblom has published a collection of studies and essays, some of them decidedly charming, called "Dikt och Verklighet," "Fiction and Fact." The literary success of the year (from a financial point of view) has been won by Sigurd's "Fru Westberg's Snackorderingar," a collection of broadly humorous sketches of lower middle life. "Sigurd" is a pen-name. In other departments a few books have been published, which we here note. Viktor Rydberg has written an "Epilogue" for the Swedish translation of S. Laing's "Modern Science and Modern Thought." It is said to be an able plea for a rather novel kind of religious idealism, without antagonizing new discoveries in science. Karl af Geijerstam has somewhat to say on "Hypnotism och Religion," and D. Bergström deals with "Kommunism och Socialism." August Strindberg has published a collection of mixed essays called "Tryckt och Otryckt." A. Hedin, in his "Episode of the Necklace," has furnished a clever study in the history of the French Revolution, and K. V.

Baath, in his "Northern Life in the Olden Times," has produced a valuable as well as interesting essay. No plays of the year have been specially noteworthy. Frans Hedberg's "Härda Sinnen" has created some sensation, as dealing with realistic representation of rustic life, and K. Michaelsson's "Möln" is quite up to the reputation heretofore acquired by the author. In poetry we may note O. D. af Wirsén's "Vintergrönt" and D. Fallström's "Chrysantemum." New poets of promise are Gustaf Fröding and Per Hallström, the latter a sort of Swedish Browning.

LOUISIANA, a Southern State, admitted to the Union April 30, 1812; area, 48,720 square miles. The population, according to each decennial census since admission, was 152,923 in 1820; 215,739 in 1830; 352,411 in 1840; 517,726 in 1850; 708,002 in 1860; 726,915 in 1870; 939,946 in 1880; and 1,118,587 in 1890. Capital, Baton Rouge.

Government.—The following were the State officers during the year: Governor, Francis T. Nicholls, Democrat; Lieutenant-Governor, James Jeffries; Secretary of State, Leonard F. Mason; Treasurer, William H. Pipes; Auditor, Ollie B. Steele; Superintendent of Public Education, William H. Jack; Attorney-General, Walter H. Rogers; Commissioner of Agriculture, Thompson J. Bird; Chief Justice of the Supreme Court, Edward Bermudez; Associate Justices, Samuel D. McEnery, Charles E. Fennner, Lynn B. Watkins, and James A. Breaux.

Population by Races.—The following table shows the white and colored population of the State in 1880 and 1890, as reported by the Federal census:

PARISHES.	WHITE.		COLORED.	
	1890.	1880.	1890.	1880.
Acadia.....	11,582	.....	1,640	.....
Ascension.....	8,061	5,968	11,442	10,555
Assumption.....	10,647	6,938	8,966	8,067
Averyelles.....	12,821	8,488	12,241	8,218
Bienville.....	7,797	5,455	6,811	4,957
Bossier.....	4,166	3,256	16,161	12,786
Caddo.....	7,983	6,921	23,561	19,368
Caldwell.....	16,702	9,919	8,890	2,407
Cameron.....	2,682	2,870	3,181	2,896
Catahoula.....	2,387	2,087	441	324
Clatsborne.....	6,990	5,724	4,978	4,527
Concordia.....	9,750	8,541	18,559	10,295
De Soto.....	1,546	1,320	19,324	18,594
East Baton Rouge.....	6,553	5,116	18,275	10,487
East Carroll.....	9,368	7,108	16,547	12,663
East Feliciana.....	967	1,023	11,390	11,090
Franklin.....	5,144	4,497	12,759	10,635
Grant.....	2,686	2,701	4,064	3,768
Iberia.....	4,847	3,320	8,414	9,862
Iberville.....	10,400	8,100	10,507	8,575
Jackson.....	6,617	4,784	15,236	12,750
Jefferson.....	4,816	2,925	2,687	2,403
Lafayette.....	6,067	4,664	6,514	7,290
Lafourche.....	6,993	7,694	6,966	5,541
Lincoln.....	14,210	11,282	7,884	7,866
Livingston.....	8,442	6,177	6,811	4,498
Madison.....	4,875	4,265	494	993
Morehouse.....	900	1,261	12,295	12,445
Natchitoches.....	8,496	5,747	12,290	10,659
Orleans.....	10,233	7,638	15,574	12,999
Ouachita.....	176,285	158,967	65,699	57,617
Plaquemines.....	5,522	4,502	12,463	10,180
Point à Coupée.....	5,385	4,254	7,156	7,214
Rapides.....	4,622	4,785	14,991	12,999
Red River.....	11,774	9,519	15,847	13,943
Richland.....	2,736	2,507	7,791	6,066
Sabine.....	2,980	3,161	7,250	6,279
St. Bernard.....	7,304	5,486	2,075	1,477
St. Charles.....	2,325	2,104	1,999	2,868

PARISHES.	WHITE.		COLORED.	
	1890.	1880.	1890.	1880.
St. Charles.....	1,979	1,401	5,758	5,746
St. Helena.....	3,449	3,828	4,618	4,176
St. James.....	5,632	4,850	10,086	9,862
St. John the Baptist....	4,674	3,855	6,641	5,792
St. Landry.....	17,780	20,473	22,840	19,399
St. Martin.....	6,988	5,758	7,883	6,876
St. Mary.....	7,904	6,717	14,459	18,115
St. Tammany.....	6,814	4,258	3,779	2,595
Tangipahoa.....	7,886	5,608	4,754	4,014
Tensas.....	1,111	1,571	15,583	16,287
Terre Bonne.....	10,315	8,618	9,797	9,111
Union.....	9,806	8,014	7,498	5,512
Vermilion.....	11,322	6,771	2,912	1,957
Vernon.....	5,352	4,763	551	877
Washington.....	4,567	3,475	2,080	1,712
Webster.....	6,120	4,322	7,341	5,083
West Baton Rouge.....	2,375	2,252	5,988	5,415
West Carroll.....	1,427	1,839	2,821	1,437
West Feliciana.....	2,271	2,287	12,791	10,522
Winn.....	6,060	4,737	1,022	1,047
The State.....	554,712	454,954	562,893	483,655

There were also in the State in 1890 315 Chinese, 39 Japanese, and 628 Indians.

The Lottery Amendment.—Early in January a hearing was had before Judge Buckner, of the district court at Baton Rouge, in the *mandamus* suit, *State ex rel. Morris vs. Mason*, which was brought in December, 1890, by the agents of the lottery company against the Secretary of State, to compel the publication of the proposed lottery amendment to the State Constitution. The Secretary of State had refused to publish the amendment, on the ground that it had not been legally adopted by the Legislature. On Jan. 19 the decision of Judge Buckner was rendered in favor of the defendant, from which an appeal was taken to the State Supreme Court. Arguments were heard by that tribunal on Feb. 17 and 18, and the decision was reserved.

The State Constitution requires that a proposed amendment be passed by a two-third vote of all the members in each House of the Legislature, after having been read in each House on three separate days; that such amendment, together with the yeas and nays thereon, be entered on the journal; and that the Secretary of State cause it to be published in certain newspapers, after which it shall be submitted to a vote of the people. The lottery amendment had been introduced and passed through the Legislature not in the usual form of a resolution proposing an amendment, but in the form of a bill providing a method of submitting to the people the amendment therein set forth. This bill had passed both Houses by a two-third vote, had been presented to the Governor like any other bill, had been vetoed, and had passed the House over the veto, but not the Senate. The friends of the bill claimed that, as the clause of the Constitution relating to its amendment contained no requirement that proposed amendments be submitted to the Governor for his approval, the veto in this case was nugatory, and the amendment, having once passed each House by a two-third vote, was legally before the people. The Secretary of State insisted that this clause of the Constitution should be construed with the other provisions of the instrument, and that amendments should go through the same course as other legislation. He further claimed that, even if this proposition

were not true, the measure in this case, being in the form of a bill containing various other matters beside the amendment in question, was subject to the section of the Constitution relating to the passage of bills, and must be passed over the veto. The Secretary also attacked the correctness of the printed journals of the Legislature respecting the passage of the amendment, and also claimed that it contained matters of legislative detail which could not legally be placed in the Constitution. For these reasons he declined to publish the alleged amendment. The court rendered its decision on April 27. A majority of three judges—Chief-Justice Bermudez and Justices Watkins and McEnery—decided that the amendment need not be submitted to the Governor; that having once passed each House by a two-third vote, it must be published according to law, and submitted to the people. They decided that the printed legislative journals were conclusive evidence of the facts therein stated; and that the amendment was not rendered void by any alleged legislative matter which it contained. Justices Fenner and Breauz dissented from these views.

The amendment in question provides that, during the term of twenty-five years from January, 1894, John A. Morris, his heirs and assigns, in consideration of the privilege of maintaining lotteries during that period, shall pay to the State annually the following sums: For public schools, \$350,000; for levees, \$350,000; for State charities, \$150,000; for pensions, \$50,000; for the city of New Orleans for drainage and other sanitary purposes, \$100,000; for the general fund of the State, \$250,000.

Political.—The State Supreme Court had no sooner decided that the lottery amendment must be published according to law, and submitted to a popular vote at the election of April, 1892, than the friends and opponents of that measure began serious preparation for a determined contest before the people. A full set of State officers was to be chosen at the same April election, and the lottery question was thereby complicated with the various local personal and party interests usually involved in a State election. The first skirmish in the contest was to determine whether the lottery or the anti-lottery Democrats should control their party and nominate the party candidates, a Democratic nomination being ordinarily equivalent to an election. The Democratic convention was called to meet on Dec. 16. Several months prior thereto the anti-lottery Democrats and those who were adherents of the Farmers' Alliance came to an agreement, by which they were to co-operate in securing the election of anti-lottery delegates to the convention, who would support therein a fusion ticket headed by Thomas S. Adams, President of the State Alliance, for Governor, and containing representatives of both the Alliance and the anti-lottery people as candidates for the other offices. In opposition to this ticket the lottery people and many of the regular Democrats, without regard to the lottery question, urged the nomination of a ticket headed by ex-Gov. Samuel D. McEnery, then a justice of the State Supreme Court. At the Democratic primaries a vote for the McEnery faction was generally regarded as a vote in favor of the lottery, while a vote for the

Adams faction was clearly a vote against it. As a result of these primaries, the McEnery party carried every ward in New Orleans, while many of the country parishes sent Adams delegates, contesting delegations being frequently the result. Under these circumstances, the Adams delegates decided to run no risk by entering the convention with their opponents, unless the latter would concede certain of their demands, among which was a platform declaration denouncing the lottery amendment. At a conference between the two factions on the day preceding the convention it was found that no basis of agreement could be reached, and on Dec. 16 the anti-lottery and Alliance delegates assembled in one hall at Baton Rouge, while the McEnery delegates assembled in another. The anti-lottery convention, being called to order by the chairman of the Democratic State committee, who is an opponent of the lottery, claimed to be the regular Democratic State Convention. On the other hand, when the majority of the Democratic State committee learned that their chairman had sided with their opponents, they held a meeting on the morning of Dec. 16, deposed him from office, and selected a new chairman, who called the McEnery convention to order as the Regular Democratic State Convention. The anti-lottery or Adams convention, according to the report of its committee on credentials, contained 372 of the 686 delegates necessary to form a full convention, and it was the first to complete its work, adjourning on Dec. 17. Thomas S. Adams, although chosen to head the ticket, was induced to decline the honor, and to accept the candidacy for Secretary of State. In his place, Murphy J. Foster, a pronounced anti-lottery Democrat, was selected as the candidate for Governor. The remainder of the ticket was as follows: For Lieutenant-Governor, Charles Parlange; for Treasurer, John Pickett; for Auditor, W. W. Head; for Attorney-General, Milton J. Cunningham; for Superintendent of Education, A. D. Lafargue. The platform contained the following:

The Democratic party of the State claim that, through its administration and by the observance of the party's principle, the State has been placed upon the high road of general and individual prosperity.

A single obstruction now stands in the way of the progress of this State. An amendment to the State Constitution is proposed whereby its revenue shall be largely derived from the Louisiana lottery. Such means of raising revenues are at variance with the civilization of the century, in opposition to and subversive to all Democratic principle. Demanding equal rights to all and special privilege to none, we hereby reaffirm our uncompromising hostility to the entire principle of lottery gambling as denounced on the State Democratic platform of 1883.

We denounce the proposed amendment to our State Constitution to be submitted to the vote of the people in April next as a concession to a monopoly, wholly undemocratic, and its adoption destructive of our liberties. No Democratic platform should be adopted which does not condemn and denounce all lotteries until they shall have ceased to exist in Louisiana, nor should any Democrat vote for any State, legislative, or judicial officer who is not unalterably opposed to lotteries and pledged to promote the passage of laws which will secure their suppression.

The McEnery convention, which also claimed to contain a majority of the total number of delegates entitled to seats in a Democratic con-

vention, did not complete its work till Dec. 19. The following ticket was selected: For Governor, Samuel D. McEnery; for Lieutenant-Governor, Robert C. Wicliffe; for Secretary of State, Leonard F. Mason; for Treasurer, Gabriel Montegut; for Auditor, Ollie B. Steele; for Attorney-General, Edgar W. Sutherland; for Superintendent of Public Education, J. V. Calhoun. The following is the more important part of the platform adopted:

We call the attention of the people of Louisiana, and especially of the constituencies interested, to the fact that many parishes were unrepresented in this convention, through the revolutionary acts of the delegates from those parishes who, without cause, excuse, or provocation, refused to take their seats and to participate in its deliberations, as they were appointed to do; but, on the contrary, organized an independent convention and placed in nomination a ticket which has none of the authority or regularity of a Democratic nomination with which to go before the people, and can only be classed as an independent or third party ticket.

We ask the agriculturists of this State to abide patiently their time and to assist the Democratic party in its approaching battle for that power which alone can give relief. There is no room in the political campaign approaching for a third party, and the establishment of a third party in the South can only disrupt the Democratic party and aid in the perpetuation of Republican rule.

Whereas, A large majority of the members, both pro and anti, of this convention have been instructed by their constituents to secure the submission of the revenue amendment to a primary election of white Democratic voters, to be held under proper rules and regulations at a date previous to the general election; and *Whereas*, It is impossible to provide for such settlement in the absence of, and by reason of the actions of, a number of delegates who are opposed to said amendment; therefore, be it

Resolved, That the State Central Committee be, and they are hereby, authorized, if possible, to make any and all agreements with the pro- and anti-lottery Democrats for the submission of said amendment to a primary election of white Democratic voters, at a date to be agreed to by both parties, and the State Central Committee is directed to use every honorable means to bring about a settlement of this question in accordance with the power herein conveyed.

The Republican State Convention was not held until Jan. 19, 1892. It then nominated the following ticket: For Governor, Albert H. Leonard; for Lieutenant-Governor, H. Dudley Coleman; for Secretary of State, Terence Voisin; for Treasurer, Chester B. Darrale; for Auditor, Charles A. Fontelieu; for Attorney-General, John Yost; for Superintendent of Public Education, L. A. Martinet. A long platform was adopted, placing the party clearly on the anti-lottery side. Its most important planks are as follow:

The right of every citizen to cast one free ballot in public elections, and to have that ballot duly counted, is paramount to all other issues.

We solemnly warn the people of Louisiana and the people of the United States that their liberties will be seriously threatened by the continued existence of a government in this State which usurped power by violence, and has for years maintained itself by force and fraud combined.

In the name of humanity, of justice, and of liberty, we protest against the political intimidation, perjury, and murders which have so long disgraced the State.

We earnestly recommend that the present national law providing for a bounty on sugar, be faithfully carried out, and we trust that the Republican mem-

bers of Congress will prevent the efforts now being made by the Democratic members of that body to defeat or suspend the operation of that wise measure.

We are opposed to all monopolies and all trusts.

The revenue amendment, which has been submitted by a Democratic Legislature to the people of the State, presents questions of grave importance, involving financial, economical, and moral considerations. Fully recognizing that it is the right and the duty of every voter to determine these questions as his judgment and conscience may dictate, the Republicans of Louisiana declare that, in sympathy with the sentiment of the Federal Administration and of the Republican party of the nation, they are opposed to any measure having for its object the legalizing of any form of gambling.

Resolved, That we here declare white supremacy, as an article of party faith, to be rank political heresy, destructive of the rule of the majority.

We demand the fullest protection of the right of free speech and public discussion, without fear of peril to person or estate.

We denounce lynching as unjustifiable homicide, and demand a judicial trial of all offenders against the law.

We demand the repeal of all caste or class legislation, and particularly of the separate-car law, which is here declared a blot on our statute books and a breeder of discord and turmoil among its citizens.

Delegates to the Republican National Convention of 1892 were elected at this time, and a resolution recommending them to vote for the re-nomination of President Harrison was adopted. The election will take place in April, 1892.

LOWELL, JAMES RUSSELL, an American poet and essayist, born in Cambridge, Mass., Feb. 22, 1819; died there Aug. 12, 1891. It seems more than usually worth while to take a glance at Mr. Lowell's ancestry, for he inherited traits from each progenitor, making more apparent use than can often be traced of the varied and interesting material which it was his happy fortune to bring into an environment that was also exceptionally fortunate. The family was descended, in this country, from Percival Lowell, a merchant, who came from Bristol, England, to Roxbury, Mass., in 1639. John, son of Percival, was the earliest minister of Newburyport, where he was settled from 1726 to 1767. His son John was graduated at Harvard College in 1760, and admitted to the bar in 1762. In 1776 he represented Newburyport in the Provincial Assembly, and was an officer of militia. He removed to Boston in 1777, and was a legislator from that city in 1778. In 1780 he was a delegate to the convention that framed the Constitution of Massachusetts, serving on the committee that drafted that instrument. He secured the insertion into it of the clause "all men are born free and equal," which he believed, if accepted, would cause the legal abolition of slavery in the State. The Supreme Court upheld his position, and slavery was declared abolished. In 1772-'73 he was a member of the Continental Congress, and was appointed by that body one of three judges for the trial of appeals from courts of admiralty. In 1789 he was made United States judge of the district of Massachusetts, and in 1801 chief justice of the First Circuit, which included Maine, New Hampshire, Massachusetts, and Rhode Island. He was one of the founders of the American Academy of Arts and Sciences, and a poem or an oration was an occasional

episode of his busy life. His son John was graduated at Harvard, studied law, traveled in Europe, and returned in 1806 to devote himself to literature, especially to controversial political and religious writing. He attacked the supporters of the War of 1812 with great skill and severity. Edward Everett said of him: "He possessed colloquial powers of the highest order and a flow of unstudied eloquence never surpassed, and rarely, as with him, united with the command of an accurate, elegant, and logical pen." Among his pamphlets the following titles are suggestive: "Peace without Dishonor, War without Hope"; "Mr. Madison's War—a Dispassionate Inquiry into the Reasons alleged by Madison for declaring an Offensive and Ruinous War with Great Britain"; "Are you a Christian or a Calvinist?" He was an ardent lover of nature, and was foremost in aiding the agricultural and horticultural interests of the State. Another son of Judge John Lowell was Francis, who was graduated at Harvard College in 1793, and became a merchant in Newburyport. In 1810 he visited England, and remained for three years. On his return he introduced cotton manufacture into the United States. He was principally instrumental in having inserted into the tariff act of 1816 the clause that imposed a duty on cotton fabrics. Lowell, Mass., which he had planned, was named for him. Another son of Judge John Lowell was Charles, father of James Russell. Charles was graduated at Harvard College in 1800, and studied law, but abandoned its practice for that of theology. He spent two years in Edinburgh, studying, traveled on the Continent, and after his return was settled over the West Unitarian Church in Boston, a place which he held until his death, at the age of seventy-nine. Failing health often compelled him to seek rest and change, and he traveled extensively in Europe. He was an eloquent and fervid orator, a strong opponent of slavery, and a writer on questions of the day. He married a sister of Robert Traill Spence, of the United States navy. When Spence, at nineteen years of age, was serving under Decatur on a captured Tripolitan gunboat, she was blown up by a hot shot sent through her magazine. After the explosion, with her stern blown to pieces and under water, Spence kept on loading and firing the gun he had charge of. Finally, with his crew of eleven survivors, he ordered three cheers, and, sitting on the piece, waving his cap, he went down with the wreck. They were rescued, and he lived to repeat his valorous conduct. He was made lieutenant and master-commander in quick succession, and at the age of twenty-seven became past captain. He was commended for his manoeuvre in obstructing the British fleet off Baltimore. In 1822, as senior American naval officer in the West Indies, he issued the protest against Francisco Morales, who had threatened death to Americans on the Spanish main, which was effective in preventing outrage and maintaining the honor of the flag. Through his mother, James Russell Lowell seems to have inherited his purest imaginative strain and his sense of humor. While it almost seems, when we read, as if we could point out the special ancestor from whom he took the cue for this or that act of his

life, he was no plagiarist in humanity. His personality informs all he has said or written, so that we seem to see the expression of the eye and the attitude of body as well as mind in which he was when the pen obeyed the will. His all-pervading wit and humor, allied to pathos, are probably the qualities that occasion this emotion.

As to his mental ancestry, that, too, was of the bluest blood. The influence of this ancestry may be traced, perhaps, but here, too, he has made the result of study his own by assimilation. He is original by his own definition, given in his essay on Thoreau. "Originality consists in the power of digesting and assimilating thoughts so that they become part of our life and substance. Montaigne, for example, is one of the most original of authors, though he helped himself to ideas in every direction. But they turn to blood and coloring in his style, and give a freshness of complexion that is forever charming." Again, in his essay on Keats, he says: "Men have their intellectual ancestry, and the likeness of some one of them is forever unexpectedly flashing out in the features of a descendant, it may be after a gap of several generations. In the parliament of the present every man represents a constituency of the past."

Not only were Lowell's opportunities for study such as few boys of his time possessed, but a passionate love of books made his reading not so much study as loving intimacy with the authors who talked through them. It is the belief that such men as Lowell will read that makes such men as Shakespeare, Dante, Cervantes, Hawthorne, and Browning write. In his essay on "Some Letters of Walter Savage Landor," he gives us this picture of his early habits of study: "I was first directed to Landor's works by hearing how much store Emerson set by them. I grew acquainted with them fifty years ago in one of those arched alcoves in the old college library in Harvard Hall which so pleasantly secluded without wholly isolating the student. That foot-steps should pass across the mouth of his Aladdin's cave, or even enter it in search of treasure, so far from disturbing only deepened his sense of possession. These faint rumors of the world he had left served but as a pleasant reminder that he was the privileged denizen of another, beyond 'the flaming bounds of place and time.' There, with my book lying at ease and in the expansion of intimacy on the broad window-shelf, shifting my cell from north to south with the season, I made friendships, that have lasted me for life, with Doddsley's 'Old Plays,' with Cotton's 'Montaigne,' with Hakluyt's 'Voyages,' among others that were not in my father's library. It was the merest browsing, no doubt, as Johnson called it, but how delightful it was! All the more, I fear, because it added the stolen sweetness of truancy to that of study, for I should have been buckling to my task of the day. I do not regret that diversion of time to other than legitimate expenses, yet shall I not gravely warn my grandson to beware of doing the like? I was far from understanding all I heard in the society of my elders into which I had smuggled myself, and perhaps it was as well for me; but those who formed it condescended to me at odd moments with the tolerant com-

placency of greatness, and I did not go away empty. Landor was in many ways beyond me, but I loved the company he brought, making persons for me of what had before been futile names."

Mr. Lowell held in such abhorrence the custom, so prevalent of late, of blending the public and private affairs of men and women known to fame, that in writing of him one feels even more than usually shy of seeming to intrude upon any privacy but that which may, after all, be called the most sacred; for what is the laying bare of the soul, as Lowell in common with all critical writers constantly did, but spreading abroad to the best of one's ability a man's inmost nature? In a tribute to his friend, Dr. Oliver Wendell Holmes says:

I am thinking now not of Lowell's wonderful gifts and acquirements, but of his charming companionship. If he had any fault in that relation, it was a too generous estimate of his friends. He loved to approve anything which they had done, and may sometimes have been partial in his judgment. Yet he had the courage to warn a friend if he thought he was falling short of his own standard of excellence. In general company his talk was easy, lively, witty, good-humored, often jocular, and was capable of condescending to a pun when the temptation was strong. With all his vast reading, he was not in the habit of quoting passages of prose or verse from the authors with whom he was familiar. I speak with some hesitation, but I question whether he remembered continuous extracts as readily and surely as some of his literary contemporaries—Browning, for instance. But on all literary questions he was an encyclopedia of information. His mind was too robust to be smothered under any load of erudition. Without any of that nervous irritability which belongs to oversensitive and under-vitalized organizations, he was alive, alive all over to the shows of the outer world and the movements in the inner world of consciousness. He had an eye and an ear for the trees and flowers and birds of Elmwood; he recognized elements of beauty in the lazy Charles, which flowed by his windows, its waters now brackish and turbid from the inland streams, now salt and lucid from the ocean. Its broken and reedy banks, the monotonous expanse of its marshes were dear to his indulgent outlook. There are no gifts so munificent as those which the poet's eye bestows upon its humblest surroundings.

In regard to the personal and anecdotal manner of writing biography, Lowell says, in his essay on "Izaak Walton":

The modern biographer has become so indiscriminate, so unconscious of the relative importance of a single life to the universe, so careless of the just limits whether of human interest or endurance, so communistic in assuming that all men are entitled to an equal share of what little time there is left in the world, that many a worthy whom a paragraph from the right pen might have immortalized is suffocated in the trackless swamps of two octavos. I am inclined to apply what was said of states to men also, and call him happiest who has left fewest materials for history. It is at least doubtful whether gossip gain body by bottling. In these chattering days, when nobody who really is nobody can stir forth without the volunteer accompaniment of a brass band, when there is a certificated eye at every key-hole, and when the public informer has become so essential a minister to the general comfort that the world can not go about its business of a morning till its intellectual appetite is appeased with the latest doings and sayings of John Doe and Richard Roe, there is healing in the gentlemanlike reserves of the past, a benign sense of seclusion, a comfort such as loved hands bring to fevered brows, in the thought of one who, like Wal-

ton, has been safe for two hundred years in the impenetrable stronghold of the grave. Malice domestic, treason, interviews, nothing can touch him further. The sanctities of *his* life can not be hawked about the streets or capitalized in posters as a whet to the latest edition of "The Peeping Tom." If it be the triumph of an historian to make the great highways of the olden times populous and noisy, or even vulgar with their old life again, it is nevertheless a consolation that we may still find by-paths there, dumb as those through a pine forest, sacred to meditation and to grateful thoughts.

If Mr. Lowell was fortunate in his ancestry, if his nature was formed from the blending of traits and talents that made the sure foundation of a republic of government and a republic of letters, he was also happy in the language that was to be the medium of his thoughts. It was the speech of men who had preserved their language, as they had kept their principles, pure from early times, and this had been strengthened and expanded by the necessity of using words to express the grandeur, the pathos, the tragedy, the courtliness, the imagination, the reverence, the tender affections, that naturally accompanied the settlement by men and women, exiled patriots and Christians, of a wild and picturesque country amid savages; the attempt to transfer monarchical forms and leave behind the monarchical spirit, to preserve liberty and to prevent license, to defend dignity and to show due respect, to maintain the home upon love, the church upon godly fear, the state upon a blending of honor for dignitaries and individual rights. The destiny that led them conquerors through two wars with their mother-country—one of the most powerful on the globe—to the founding of a nation that has survived the greatest civil war of modern times, and made the words and acts and *personnel* of its government and representatives respected throughout the world, made a language not only fit for the great poet or orator, but one that might go far to the production of orator or poet. The part that the growth and formation of language play in the making of a country's literature is characteristically and suggestively set forth by Lowell in his essay on Shakespeare:

Shakespeare was doubly fortunate. Saxon by the father and Norman by the mother, he was a representative Englishman. A country boy, he learned first the rough-and-ready English of his rustic mates, who knew how to make nice verbs and adjectives courtesy to their needs. Going up to London, he acquired the *lingua Aulica* precisely at the happiest moment, just as it was becoming, in the strictest sense of the word, *modern*. Shakespeare, then, found a language already to a certain extent *established*, but not yet fettered by dictionary and grammar-mongers; a versification harmonized, but which had not yet exhausted all its modulations, nor been set in the stocks by critics who deal judgment on refractory feet that will dance to Orphean measures of which their judges are insensible. What was of greater import, no arbitrary line had been drawn between high words and low; vulgar then meant simply what was common; poetry had not been alienated from the people by the establishment of an upper house of vocables, alone entitled to move in the stately ceremonials of verse and privileged from arrest, while they forever keep the promise of meaning to the ear and break it to the sense. The hot conception of the poet had no time to rove while he was debating the comparative respectability of this phrase or that; but he snatched what word his instinct prompted,

and saw no indiscretion in making a king speak as his country nurse might have taught him.

Much of the same advantage of stability, purity combined with freshness, terseness, and idiomatic strength Lowell found ready for his use when he began to wield the poetic pen. What he said of Lincoln in his "Commemoration Ode" might have been said of the language in which Lincoln spoke, and through which Lowell's praise of him found its way to the hearts of his countrymen.

Nothing of Europe here,
Or, then, of Europe fronting mornward still,
Ere any names of serf or peer
Could Nature's equal scheme deface
And thwart her genial will.

New birth of our new soil, the first American.

Mr. Lowell has set forth in characteristic fashion his knowledge and appreciation of the nature and life of which his own genius was one of the finest products. In the introduction to the "Biglow Papers" he puts into the mouth of Parson Wilbur the following description of Yankee character:

A strange hybrid, indeed, did circumstances beget, here in the New World, upon the old Puritan stock, and the earth never before saw such mystic-practicalism, such niggard-geniality, such calculating-fanaticism, such cast-iron enthusiasm, such sour-faced humor, such close-fisted generosity. Yet, after all, thin, speculative Jonathan is more like the Englishman of two centuries ago than John Bull himself is. . . . He feels more at home with Fulke Greville, Herbert of Cherburg, Quarles, George Herbert, and Browne than with his modern English cousins. He is nearer than John by at least a hundred years to Naseby, Marston Moor, Worcester, and the time when, if ever, there were true Englishmen. John Bull has suffered the idea of the invisible to be very much fattened out of him. To move John, you must make your fulcrum of solid beef and pudding; an abstract idea will do for Jonathan. It remains to speak of the Yankee dialect. Shakespeare stands less in need of a glossary to most New Englanders than to many a native of the Old Country. The English have complained of us for coining new words; many of those so stigmatized were old ones by them forgotten, and all make now an unquestioned part of the currency wherever English is spoken. Undoubtedly, we have a right to make new words, as they are needed by the fresh aspects under which life presents itself here in the New World; and, indeed, wherever a language is alive it grows.

As no writer in our country has done more than Lowell to make and keep pure the treasure of our noble tongue, it seems appropriate to dwell a little at length upon his notion of a writer's duty toward the words that are his thoughts; for, as he says, "we think in words." "The language of the people in the mouth of a scholar" was his ideal of literary excellence. In the introduction to the second series of the "Biglow Papers," he writes:

I imagined to myself such an up-country man as I had often seen at antislavery gatherings, capable of district-school English, but always instinctively falling back into the national stronghold of his homely dialect when heated to the point of self-forgetfulness. In choosing the Yankee dialect, I did not act without forethought. It had long seemed to me that the vice of American writing and speaking was a studied want of simplicity; that we were in danger of looking on our mother-tongue as a dead language,

to be sought in the grammar and dictionary rather than in the heart; and that our only chance of escape was by seeking it at its living sources, among those who were, as Scottow says of Major-General Gibbons, divinely illiterate. Our popular idiom is racy with life, vigor, and originality, bucksome (as Milton used the word) to our new occasions, and proves itself no mere graft by sending up new suckers from the old root in spite of us. That we should be all made to talk like books, is the danger by which we are threatened by the universal school-master. No language after it has faded into *diction*, none that can not suck up the feeding juices accreted for it in the rich mother-earth of common folk, can bring forth a sound and lusty book. Language is the soil of thought, and our own especially is a rich leaf-mold, the slow deposit of ages, the shed foliage of feeling, fancy, and imagination, which has suffered an earth-change that the vocal

ance. Vulgarisms are often only poetry in the egg. Properly speaking, vulgarity is in the thought, and not in the word, or in the way of pronouncing it. Modern French, the most polite of languages, is barbarously vulgar if compared with the Latin out of which it has been corrupted, or even with Italian. There is a wider gap, and one implying greater boorishness, between *ministerium* and *métier*, or *sapientia* and *sachant* than between *drive* and *drove*, or *agin* and *against*.

Of course, in what I have said, I wish to be understood as keeping in mind the difference between provincialisms, properly so called, and slang. Slang is always vulgar, because it is not a natural, but an affected way of talking, and all mere tricks of speech or writing are offensive. I do not think that Mr. Biglow can fairly be charged with vulgarity, and I should have entirely failed in my design if I had not



ELMWOOD, RESIDENCE OF JAMES RUSSELL LOWELL.

forest, as Howell called it, may clothe itself anew with living green. The quality of exaggeration has often been remarked on as typical of American character, and especially of American humor. But it seems to me that a great deal of what is set down as mere extravagance is more fitly to be called intensity and picturesqueness, symptoms of the imaginative faculty in full health and strength, though producing as yet only the raw and formless material in which poetry is to work. By and by, perhaps, the world will see it fashioned into poem and picture, and Europe, which will be hard pushed for originality ere long, may have to thank us for a new sensation. The French continue to think Shakespeare exaggerated because he treated English just as our country-folk do when they speak of "a steep price" or say that they "freeze to" a thing. The first postulate of an original literature is that a people should use their language instinctively and unconsciously, as if it were a lively part of their growth and personality, not as the mere torpid boon of education or inheri-

made it appear that high and even refined sentiment may coexist with the shrewder and more comic elements of Yankee character.

A single specimen from the minute and thoughtful study in words contained in the introduction will suffice. Speaking of "illy," Lowell says: "Mr. Bartlett says it is 'a word used by writers of an inferior class, who do not seem to perceive that "ill" is itself an adverb, without the termination *ly*,' and quotes Dr. Messer, President of Brown University, as asking triumphantly, 'Why don't you say welly?' I should like to have Dr. Messer answer his own question. It would be truer to say that it was used by people who still remembered that *ill* was an adjective, the shortened form of *evil*, out of which Shakespeare and the translators ventured to make *evilly*. The objection to 'illy' is not an etymo-

logical one, but simply that it is contrary to good usage—a very sufficient reason. 'Ill' as an adverb was at first a vulgarism, precisely like the rustic's when he says, 'I was treated *bad*.' In concluding his brief and forcible comparison and comments, Lowell says:

I profess myself a fanatical purist, but with a hearty contempt for the speech-gilders who affect purism without any thorough, or even pedagogic, knowledge of the engendure, growth, and affinities of the noble language about whose *mésalliances* they seem to be so solicitous. Should we be nothing because somebody had contrived to be something (and that perhaps in a provincial dialect) ages ago? and to be nothing by that very attempt to be that something which they had already been, and therefore which nobody could be again, without being a bore? Is there no way left, then, I thought, of being natural, of being *naïf* which means nothing more than native, of belonging to the age and country in which you are born? The Yankee, at least, is a new phenomenon; let us try to be *that*. I should have entirely failed in my design if I had not made it appear that high, and even refined, sentiment may co-exist with the shrewd and more concise elements of Yankee character. To me the dialect was native, was spoken all about me when a boy, at a time when an Irish day-laborer was as rare as an American one now. When I write in it, it is as in a mother-tongue, and I am carried back far beyond any studies of it to long-ago noons in my father's hay fields, and to the talk of Sam and Job over their jug of blackstrap under the shadow of the ash tree, which still dapples the grass whence they have been gone so long.

The hay fields to which he alludes lay back of the house in Cambridge in which he was born, and in which he died. It was a large frame building, standing in the midst of great elm trees, secluded from the street and over-looking the river Charles. The place was called "Elmwood," and was a historic Tory mansion when Rev. Charles Lowell bought it. It is shown in the accompanying engraving.

During his senior year Lowell's habit of browsing instead of studying cost him a rustication. The moral of lapses from text-book good-behavior would be easier to point if he had not spent that period of disgrace in Concord, Mass., where he was invited familiarly to Emerson's house, forming there the acquaintance of Thoreau, Alcott, and the coterie of men that make a notable group in American literary annals. The funny side of transcendentalism appealed at once to him, and when he was readmitted to college the class poem in which he gave his mates a chance to laugh with him was not the ideal Sunday-school punishment for evil courses, for it brought him praise even outside the sacred halls and the appreciative ears for which it was intended. After graduation, Lowell, like all his ancestors, read law, but this also probably was mixed with literary browsing, as he soon abandoned its practice, the only result being a story published in the "Boston Miscellany" entitled "My First Client." Another respect in which Lowell was exceptionally fortunate was that his first love was early, worthy, and enduring. It was given to Maria White, a gifted and beautiful New England maiden, to whom he addressed the poems that appeared in his first published volume, "A Year's Life." One of the best known of these is entitled "My Love," which contains these stanzas:

Not as all other women are
Is she that to my soul is dear;
Her glorious fancies come from far,
Beneath the silver evening star,
And yet her heart is ever near.
I love her with a love as still
As the broad river's peaceful might,
Which, by high tower and lowly mill,
Seems following its own wayward will,
And yet doth ever flow aright.
And on its full deep breast serene,
Like quiet isles my duties lie;
It flows around them and between,
And makes them fresh, and fair, and green,
Sweet homes wherein to live and die.

Not quite so well known is the one beginning:

True love is but a humble, low-born thing,
And hath its food served up in earthenware.

For love is blind but with the fleshly eye,
That so its inner sight may be more clear;
And outward shows of beauty only so
Are needful at the first, as is a hand
To guide and to uphold an infant's steps;
Fine natures need them not; their earnest look
Pierces the body's mask of thin disguise,
And beauty ever is to them revealed
Behind the unshapeliest, meanest lump of clay
With arms outstretched and eager face ablaze,
Yearning to be but understood and loved.

Several of these early poems are remarkable as showing that love not only taught him "the secret of grief," but taught him even thus early the secret that grief may be the truest teacher of love, a divine knowledge that is generally revealed only through experience. The following extract contains one of the most striking expressions of this:

My love, I have no fear that thou shouldst die;
Albeit, I ask no fairer life than this,
Whose numbering clock is still thy gentle kiss,
While Time and Peace with hands enlocked fly;
Yet care I not where in eternity
We live and love, well knowing that there is
No backward step for those who feel the bliss
Of faith as their most lofty yearnings high;
Love hath so purified my being's core
Meseems I scarcely should be startled, even,
To find, some morn, that thou hadst gone before:
Since, with thy love, this knowledge too was given,
Which each calm day doth strengthen more and
more,
That they who love are but one step from heaven.

The same spiritual exaltation, incomprehensible to those who know it not, was afterward embodied by Lowell in a sonnet written after the loss of his child:

I thought our love at full, but I did err;
Joy's wreath drooped o'er mine eyes; I could not see
That sorrow in our happy world must be
Love's deepest spokesman and interpreter;
But, as a mother feels her child first stir
Under her heart, so felt I instantly
Deep in my soul another bond to thee
Thrill with that life we saw depart from her.
O mother of our angel child! twice dear!
Death knits as well as parts, and still, I wis,
Her tender radiance shall enfold us here,
Even as the light, borne up by inward bliss,
Threads the void glooms of space without a fear
To print on farthest stars her pitying kiss.

From the time of his marriage, in 1844, Lowell's writings took a more serious tone and

definite purpose. In 1843, in connection with Robert Carter, he established "The Pioneer, a literary and critical magazine." Hawthorne, Whittier, Elizabeth Barrett, Poe, Dwight, Story, Neal, and Parsons were among the contributors, but the publishers failed in their portion of the contract, and the hopeful venture soon came to an end. In the following year Lowell brought out a second volume of verse, containing "A Legend of Brittany," and he and his wife, who was an ardent abolitionist, became regular contributors to "The Liberty Bell" and the "Anti-slavery Standard," in one or the other of which many of his poems had appeared. This second volume includes his first great poem, "The Present Crisis," inspired by the events that ended in the proclamation of war with Mexico. It is of interest to trace the sentiments and expressions in the earlier poems that found adequate utterance in this. The poet at last caught a movement and melody that alone will make poetic thought and feeling of lasting beauty and effect. The first suggestion is in this ode:

Great truths are portions of the soul of man;
Great souls are portions of eternity;
Each drop of blood that e'er through true heart ran
With lofty message ran for thee and me;
For God's law, since the starry song began,
Hath been, and still for evermore must be,
That every deed which shall outlast Time's span
Must spur the soul to be erect and free;
Slave is no word of deathless lineage sprung;
Too many noble souls have thought and died,
Too many mighty poets lived and sung,
And our good Saxon, from lips purified
With martyr fire, throughout the world hath rung
Too long to have God's holy cause denied.

The sentiments contained in the sonnets to Wendell Phillips and Joshua R. Giddings, though apt, are too familiar to need repetition. The following lines from "L'Envoi" are better: Who speaks the truth stabs falsehood to the heart, And his mere word makes despots tremble more Than ever Brutus with his dagger could.

Spirit supreme of Freedom! not for this
Did great Columbus tame his eagle soul
To jostle with the daws that peck at courts;
Not for this, friendless, on an unknown sea,
Coping with mad waves and more mutinous spirits,
Battled he with the dreadful ache at heart
Which tempts, with devilish subtleties of doubt,
The hermit of that loneliest solitude,
The silent desert of a great new thought.
The high evangel to our country granted
Could make apostles, yea, with tongues of fire,
Of hearts half darkened back again to clay!
'Tis the soul only that is national,
And he who pays true loyalty to that
Alone can claim the wreath of patriotism.

In the "Capture of Fugitive Slaves near Washington" the same measure is used as in "The Present Crisis." Here are four stanzas: Though we break our fathers' promise, we have nobler duties first;
The traitor to humanity is the traitor most accursed;
Man is more than constitutions; better rot beneath the sod
Than be true to church and state while we are doubly false to God!
Put golden padlocks on Truth's lips, be callous if ye will,
From soul to soul, o'er all the world, leaps one electric thrill.

But if before his duty man with listless spirit stands,
Ere long the Great Avenger takes the work from out our hands.

"The Present Crisis" is one of the poems that stand forever as inspirers of lofty sentiment and noble action. Such truth and melody apply to more wrongs than the one that inspired them. The following are three stanzas from it:

When a deed is done for freedom through the broad
earth's aching breast
Runs a thrill of joy prophetic, trembling on from east
to west,
And the slave, where'er he cowers, feels the soul
within him climb
To the awful verge of manhood, as the energy sub-
lime
Of a century bursts full blossomed on the thorny
stem of Time.

Careless seems the Great Avenger; history's pages
but record
One death grapple in the darkness 'twixt old systems
and the Word;
Truth forever on the scaffold, Wrong forever on the
throne—
Yet that scaffold sways the future, and behind the
dim unknown
Standeth God within the shadow keeping watch
above his own.

For Humanity sweeps onward; where to-day the
martyr stands,
On the morrow crouches Judas with the silver in his
hands;
Far in front the cross stands ready and the crackling
figots burn,
While the hooting mob of yesterday in silent awe
return
To glean up the scattered ashes into History's golden
urn.

The next notable poem in the volume is "Extreme Unction." It is the broken utterance of a dying man, half to the priest, who has come to offer him spiritual consolation, and half to his own too conscious soul. The evolution of imaginative thought on this theme can be traced much as in the case of "The Present Crisis." "Extreme Unction" opens with the lines:

Go! leave me, priest, my soul would be
Alone with the consoler, Death;
Far sadder eyes than thine will see
This crumbling clay yield up its breath;
These shriveled hands have deeper stains
Than holy oil can cleanse away,
Hands that have plucked the world's coarse
gains,
As erst they plucked the flowers of May.

And continues:

Men think it is an awful sight
To see a soul just set adrift
On that drear voyage from whose night
The ominous shadows never lift;
But 'tis more awful to behold
A helpless infant newly born,
Whose little hands unconscious hold
The keys of darkness and of morn.

This volume contains "The Changeling," "Longing," and the poem perhaps most popular of all that Lowell has written, "The Vision of Sir Launfal." The first two are but rhymed prose, and the last is little better than that, save for the opening address to the day in June, in which, once more, the poet has put into melodious rhyme the deep love for nature that found half expression time and again. Lowell is an

artist whose studies can be seen and whose completed poems are compositions. As a tree here, a rock there, and a cloud effect from another sketch are made into many forms, so his thought and feeling are set in different moods and measures, until each finds its happiest expression. Certainly the "Day in June" we have all sung in our hearts on a blissful summer's day, and said, "It is enough." The whole poem is said to have been composed in about forty-eight hours of almost continuous work.

In June, 1846, appeared in the "Boston Courier" the first installment of the famous "Biglow Papers." These are poems put into the mouth of a Yankee farmer, whose work is somewhat edited and freely commented upon by an imaginary New England parson, and of a New England countryman who went to the seat of war. Dr. Holmes, in an article published since Lowell's death, says: "In the study of character, especially as he observed it in New England, and of dialect as one form of its expression, he was as accurate as if the preservation of those traits and idioms had been left to him as their sole depository. His 'Yankee Idyls' are as true to the native talk of the rustics of his early remembrance as Bonny Doone and Auld Lang Syne to the language of the Scotch peasantry." Mr. Lowell says of the origin of these papers:

Thinking the Mexican War, as I think it still, a national crime committed in behoof of slavery, our common sin, and wishing to put the feeling of those who thought as I did in a way that would tell, I imagined myself such an up-country man as I had often seen at antislavery gatherings. When I began to carry out my conception, and to write in my assumed character, I found myself in a strait between two perils. On the one hand, I was in danger of being carried beyond the limit of my own opinions, or, at least, of that temper with which every man should speak his mind in print; and, on the other hand, I feared the risk of seeming to vulgarize a deep and sacred conviction. I needed on occasion to rise above the level of mere *patois*, and for this purpose conceived the Rev. Mr. Wilbur, who should express the more cautious element of the New England character and its pedantry, as Mr. Biglow should serve for its homely common sense, vivified and heated by conscience. Finding soon after that I needed some one as a mouth-piece of the mere drollery, for I conceive that true humor is never divorced from moral conviction, I invented Mr. Sawin for the clown of my little puppet show. I meant to embody in him that half-conscious *unmorality* which I had noticed as the recoil in gross natures from a puritanism that still strove to keep in its creed the intense savor which had long gone out of its faith and life. In the three I thought I should find room enough to express, as it was my plan to do, the popular feeling and opinion of the time.

In view of the instant and great success of the venture, the author's account of his relation to that success is interesting:

Very far from being a popular author under my own name—so far, indeed, as to be almost unread—I found the verses of my pseudonym copied everywhere; I saw them pinned up in work-shops; I heard them quoted and their authorship debated; I once even, when rumor had at length caught up my name in one of its eddies, had the satisfaction of hearing it demonstrated, in the pauses of a concert, that I was utterly incompetent to have written anything of the kind.

Again he says:

If I put on the cap and bells and made myself one of the court fools of King Demos, it was less to make

his majesty laugh than to win a passage to his royal ears for certain serious things which I had deeply at heart. I say this because there is no imputation that could be more galling to any man's self-respect than that of being a mere jester. I endeavored, by generalizing my satire, to give it what value I could beyond the passing moment and the immediate application. How far I have succeeded I can not tell, but I have had better luck than I ever looked for in seeing my verses survive to pass beyond their nonage.

It is pleasant to remember that Mr. Lowell lived long enough to realize that his countrymen not only understood him as he would wish to have been understood, but that his work had become an American classic whose value will increase with time, and whose delight is fresh at every perusal. In the Rev. Homer Wilbur's notes to the first installment of Hosea Biglow's contributions appeared the first draft of "The Courtin'," in regard to which Mr. Lowell says: "The only attempt I had ever made at anything like a pastoral (if that may be called an attempt which was the result almost of pure accident) was in 'The Courtin'.' While the introduction to the first series was going through the press I received word from the printer that there was a blank page left, which must be filled. I sat down at once and improvised another fictitious 'notice of the press,' in which, because verse would fill up space more cheaply than prose, I inserted an extract from a supposed ballad of Mr. Biglow. I kept no copy of it, and the printer, as directed, cut it off when the gap was filled. Presently I began to receive letters asking for the rest of it, sometimes for the *balance* of it. I had none, but to answer such demands I patched a conclusion upon it in a later addition. Afterward, being asked to write it out as an autograph at the Baltimore Sanitary Commission Fair, I added other verses, into some of which I infused a little more sentiment in a homely way, and after a fashion completed it by sketching in the characters and making a connected story. Most likely I have spoiled it." Here is an extract from "The Courtin'":

God makes sech nights, all white an' still
Fur'z you can look or listen,
Moonshine an' snow on field an' hill,
All silence an' all glisten.

Zekle crep' up quite unbeknown
An' peeked in thru the winder,
An' there sot Huldy all alone,
'ith no one nigh to hender.

The very room, coz she was in,
Seemed warm from floor to ceilin',
An' she looked full as rosy ag'in
Ez the apples she was peelin'.

'Twas kin' o' kingdom-come to look
On sech a blessed cretur,
A dogrose blushin' to a brook
Ain't modester nor sweeter.

He was six foot o' man A 1,
Clear grit and human natur',
None couldn't quicker pitch a ton
Nor drow a furrer straighter.

He'd sparked it with full twenty gals,
Hed squired 'em, danced 'em, druv 'em,
Fust this one, an' then thet, by spells—
All is, he couldn't love 'em.

But long o' her his veins 'ould run
All crinkly like curled maple,
The side she breshed felt full o' sun
Ez a south slope in Ap'il.

She thought no vice hed sech a swing
 Ez his'n in the choir;
 My! when he made Ole Hunderd ring,
 She *knowed* the Lord was nigher.

She heered a foot, an' knowed it tu,
 A-raspin' on the scraper—
 All ways to once her feelins' flew
 Like sparks in burnt-up paper.

He kin' o' pitered on the mat,
 Some doubtle o' the sekle,
 His heart kep' goin' pity-pat,
 But her'n went pity-Zekle.

An' yit she gin her cheer a jerk
 Ez though she wished him fuder,
 An' on her apples kep' to work,
 Parin' away like murder.

He stood a spell on one foot fust,
 Then stood a spell on t'other,
 An' on which one he felt the wust
 He couldn't ha' told ye nuther.

Says he, "I'd better call agin";
 Says she, "Think likely, mister"
 Thet last word pricked him like a pin,
 An'—wal, he up an' kist her.

When ma bimeby upon 'em slips,
 Hully sot pale az ashes,
 All kin' o' smily roun' the lips
 An' teary roun' the lashes.

These stanzas are from the first communication from Hosea Biglow:

Ez fer war, I call it murder—
 There you hev it plain an' flat;
 I don't want to go no fuder
 Than my Testymet for that;
 God has said so plump and fairly,
 It's as long as it is broad,
 An' you've gut to git up airly
 Ef you want to take in God.

'Tain't your eppylets an' feathers
 Make the thing a grain more right;
 'Tain't a follerin' your bell-wethers
 Will excuse ye in his sight;
 Ef you take a sword an' dror it,
 An' go stick a feller thru,
 Gov'ment ain't to answer for it,
 God 'll send the bill to you.

In regard to the lines that close these two stanzas, Mr Lowell says in answer to a criticism that they were profane: "In the first place, I was writing under an assumed character, and must talk as a person would whose mouth-piece I made myself. Will any one familiar with the New England countryman venture to tell me that he does *not* speak of sacred things familiarly? that Biblical allusions (allusions, that is, to the single book with whose language, from his church-going habits, he is intimate) are not frequent on his lips? If so, he can not have pursued his studies of the character on so many long-ago muster fields and cattle shows as I. But I scorn any such line of defense, and will confess at once that one of the things I am proud of in my countrymen is that they do not put their Maker away far from them, or interpret the fear of God into being afraid of him." Bird-of-freedom Sawin writes from the seat of war to Hosea:

This kind o' sogerin' ain't a mite like our October trainin',
 A chap could clear right out from there ef 't only looked like rainin',

An' th' cunnies, tu, could kiver up their shappoes
 with bandanners,
 An' send the busines skootin' to the bar-room with
 their banners
 (Fear o' gittin' on 'em spotted), an' a feller could cry
 quarter
 Ef he fised away his rain-rod arter too much rum an'
 water.

Afore I come away from hum I had a strong persuasion
 That Mexicans worn't human beans—an ourang-out-ang nation;
 I'd an idee thet they were built arter the darkie fashion all,
 An' kicken colored folks about, you know, 's a kind o' national;
 But wen I jined I worn't so wise as that air queen o' Sheby,
 Fer, come to look at 'em, they ain't much diff'rent from wut we be,
 An' here we air a-scrugin' 'em out o' their own dominions,
 A-shelterin' 'em, es Caleb sez, under our eagle's pinions,
 Wich means to take a feller up jest by the slack o' 's trowases
 An' walk him Spanish clean right out o' all his homes an' houses;
 Wal, it does seem a curus way, but then hooraw for Jackson!
 It must be right, fer Caleb sez it's reg'lar Anglo-Saxon.

Turning his attention to home matters, Mr. Biglow wrote as follows in regard to a State political canvass:

We were gittin' on nicely up here to our village,
 With good old idees o' wut's right an' wut ain't,
 We kin o' thought Christ went agin war an' pillage,
 An' that eppylets worn't the best mark of a saint;

But John P.
 Robinson he

Sez this kind o' thing's an exploded idee.

Parson Wilbur sez he never heerd in his life
 Thet th' apostles rigged out in their swaller-tail coats,

An' marched round in front of a drum an' a fife,
 To git some on 'em office, an' more on 'em votes.

But John P.
 Robinson he

Sez they didn't know eveythin' down in Judee.

Mr. Lowell's first prose writings were collected under the title of "Conversations with the Poets," and they formed the basis of many of the critical lectures that he delivered before the Lowell Institute in 1854-'55, and at Harvard during the professorship of Literature and Belles-Lettres, to which he was appointed on the resignation of Mr. Longfellow. Most of them appear in revised forms, in the "Riverside Edition," but of some he writes: "The dates attached were those of publication, but the bulk of the material was written many years earlier. I have refrained from modifying what was written by one—I know not whether to say so much older or so much younger than I—but at any rate different in some important respects, and this, partly from deference to him, partly from distrust of myself." The earliest volume of the present series contains the "Moosehead Journal," "Cambridge Thirty Years ago," "Leaves from my Journal in Italy and elsewhere," "Keats," "Library of Old Authors," "Emerson the Lecturer," and "Thoreau." The quaint, delicate humor,

the wisdom, the good sense that pervade these essays, never lose their charm. Lowell's prose is more flowing, more simple, and more stately in its simplicity, than is his poetry. One loves to be alone with his books, because they are companions of the most genial sort, or in company with them that others may share what is so intensified by sympathy. They are the kind of literature that one finds himself reading aloud all alone, that he may make the ear happy as well as the eye. We forget that we are reading, until the smile on our lips has turned to a laugh and recalls us to our surroundings. Lowell is pre-eminently quotable, without seeming epigrammatic in the sense in which Emerson is. Nearly every sentence has a finished thought, but the connection is so easy and so complete that the first impression is that the thought needs its setting.

His appreciation of Yankee character, and humorous setting forth of it, is as delightful in prose as in verse. Two or three extracts from "A Moosehead Journal," and "Cambridge Thirty Years ago," are at once illustrations of the author's perception and of his style:

Nineteen years ago I was walking through the Franconia Notch, and stopped to chat with a hermit, who fed with gradual logs the unwearied teeth of a saw mill. As the strident steel slit off the *slabs* of the logs, so did the less willing machine of talk, acquiring a steadier up-and-down motion, pare away that outwark bark of conversation which protects the core, and which, like other bark, has naturally most to do with the weather, the season, and the heat of the day. At length I asked him the best point of view for the Old Man of the Mountain.

"Dunno—never see it."

Too young and too happy either to feel or to affect the Horatian indifference, I was sincerely astonished, and I expressed it. The log-compelling man attempted no justification, but after a little asked:

"Come from Baws'n?"

"Yes," with peninsular pride.

"Goodle to see in the vycinity o' Baws'n."

"Oh, yes!" I said; and I thought, see Boston and die! See the State Houses, old and new, the caterpillar wooden bridges crawling with innumerable legs across the flats of the Charles; see the Common—largest park, doubtless, in the world—with its files of trees planted as if by a drill-sergeant, and then for your *nunc dimittis*.

"I should like 'awl, I *should* like to stan' on Bunker Hill. You've been there offen, likely?"

"N-o-o," unwillingly, seeing the little end of the horn in clear vision at the terminus of this Socratic perspective.

"'Awl, my young frien', you've larned neow that wut a man *kin* see any day for nawthin', children half-price, he never *doos* see. Nawthin' pay, nawthin' vally."

As I walked on, I said to myself: "There is one exception, wise hermit. It is just these *gratis* pictures which the poet puts in his show-box. The divine faculty is to see what everybody can look at."

Again from "A Moosehead Journal":

Uncle Zeb was a good specimen of this paleozoic class, extinct among us for the most part, or surviving, like the dodo, in the Botany Bays of society. If talk seemed to be flagging, our uncle would put the heel of one boot upon the toe of the other, to bring it within point-blank range, and say, "Wahl, I stump the devil himself to make that 'ere boot hurt *my* foot," leaving us in doubt whether it were the virtue of the foot or its case which set at naught the wiles of the adversary.

This characteristic bit of insight of another sort is also taken from "A Moosehead Journal":

Practical application is the only mordant which will set things in the memory. Study, without it, is gymnastics and not work, which alone will get intellectual bread. One learns more metaphysics from a single temptation than from all the philosophers. It is curious, though, how tyrannical the habit of reading is, and what shifts we make to escape thinking. There is no bore we dread being left alone with so much as our own minds. I have seen a sensible man study a stale newspaper in a country tavern, and husband it as he would an old shoe on a raft after shipwreck. Why not try a bit of hibernation? There are few brains that would not be better for living on their own fat a little while. With these reflections, I, notwithstanding, spent the afternoon over my report. If our own experience is of so little use to us, what a dolt is he who recommends to man or nations the experience of others.

From the enchanting picture of "Cambridge Thirty Years ago" is the following:

It is more often true that a man who could scarce be induced to expose his unclothed body even to a village of prairie dogs will complacently display a mind as naked as the day it was born, without so much as a fig-leaf of acquirement on it, in every gallery of Europe. If not with a robe dyed in the Tyrian purple of imaginative culture, if not with the close-fitting, work-a-day dress of social or business training—at least, my dear Storg, one might provide himself with the merest waist-clout of modesty.

One can fancy his quiet glee as he wrote in "Cambridge Thirty Years ago," of a joke repeated by each incoming college class, upon a deacon who "kept store" in the village:

Enter A, and asks gravely, "Have you any sour apples, deacon?"

"Well, no, I haven't any just now that are exactly sour; but there's the bell-flower apple, and folks that like a sour apple generally like that." Exit A.

Enter B. "Have you any sweet apples, deacon?"

"Well, no, I haven't any just now that are exactly sweet; but there's the bell-flower apple, and folks that like a sweet apple generally like that."

In "Italy," he says:

Coming from a country where everything seems shifting like a quicksand; where men shed their homes as snakes their skins; where you may meet a three-story house, or even a church, on the highway, bitten by the universal gad-fly of bettering its position; where we have known a tree to be cut down merely because "it had got to be so old," the sense of permanence, unchangeableness, and repose which Italy gives us is delightful.

This is a quotation from the essay on Keats:

One can not help contrasting Keats with Wordsworth—the one altogether poet, the other essentially a Wordsworth, with the poetic faculty added; the one shifting from form to form and from style to style, and pouring his hot, throbbing life into every mold; the other remaining always the individual, producing works, and not so much living in his poems as memorially recording his life in them. When Wordsworth alludes to the foolish criticisms on his writings, he speaks serenely and generously of Wordsworth, the poet, as if he were an unbiased third person, who takes up the argument merely in the interest of literature. He towers with a bald egotism which is quite above and beyond selfishness. Poetry was his employment; it was Keats's very existence, and he felt the rough treatment of his verses as if it had been the wounding of a limb. To Wordsworth composing was a healthy exercise; his slow pulse and imperturbable self-trust gave him assurance of

life so long that he could wait; and when we read his poems we should never suspect the existence in him of any sense but that of observation, as if Wordsworth, the poet, were a half-mad land-surveyor, accompanied by Mr. Wordsworth the distributor of stamps, as a kind of keeper. But every one of Keats's poems was a sacrifice of vitality; a virtue went away from him into every one of them; even yet, as we turn the leaves, they seem to warm and thrill our fingers with the flush of his fine senses and the flutter of his electrical nerves, and we do not wonder he felt that what he did was to be done swiftly. The faults of Keats's poetry are obvious enough; but it should be remembered that he died at twenty-five, and that he offends by superabundance and not poverty. It is only by the rich that the costly plainness which at once satisfies the taste and the imagination is attainable.

In selecting some passages from the critical essays we have the double advantage of learning what Lowell thought of the men he criticised and in what manner he told his thinkings. It has been said that although Lowell's criticisms were charming as literature, the reader did not know his opinion of the authors. We do not agree to this; but Lowell seems to talk of men more in the manner in which he would have talked to them than any writer we can recall. Their personalities seem present while he makes the genial, sympathetic *exposé* of their doings and undoings. His manner of dealing with them suggests that the province of criticism in the broadest sense is analysis rather than conclusion. He takes criticism out of the field of curiosity into that of imagination. Here are a few sentences from "Emerson as a Lecturer":

His eye for a fine telling phrase that will carry true is like that of a backwoodsman for a rifle; and he will dredge you up a choice word from the mud of Cotton Mather himself. A diction at once so rich and so homely as his I know not where to match in these days of writing by the page; it is like homespun cloth of gold. The many can not miss his meaning, and only the few can find it. It is the open secret of all true genius. What an antiseptic is a pure life! At sixty-five (or two years beyond his grand climacteric, as he would prefer to call it) he has that privilege of soul which abolishes the calendar and presents him to us always the unwasted contemporary of his own prime. . . . We do not go to hear what Emerson says so much as to hear Emerson. . . . The first lecture, to be sure, was more disjointed even than common. It was as if, after vainly trying to get his paragraphs into sequence and order, he had at last tried the desperate expedient of shuffling them. It was chaos come again, but it was a chaos full of shooting stars, a jumble of creative forces. . . . The vice of Emerson's criticism seems to be that, while no man is so sensitive to what is poetical, few men are less sensible than he of what makes a poem. He values the solid meaning of thought above the subtler meaning of style. . . . But would my picture be complete if I forgot that ample and vegete countenance of Mr. R—, of W—, how, from its regular post at the corner of the front bench, it turned in ruddy triumph to the profaner audience as if he were the inexplicably appointed fugleman of appreciation? I was reminded of him by those hearty cherubs in Titian's "Assumption" that look at you as who should say, "Did you ever see a Madonna like that? Did you ever behold one hundred and fifty pounds of womanhood mount heavenward before like a rocket?" . . . Emerson awakened us, saved us from the body of this death. Did they say he was disconnected? So were the stars, that seemed larger to our eyes, still keen with that excitement as we walked homeward with prouder stride over the creaking snow. And were they not knit together by a higher

logic than our mere sense could master? Were we enthusiasts? I hope and believe we were, and I am thankful to the man who made us worth something for once in our lives. If asked what was left, what we carried home, we should not have been careful for an answer. It would have been enough if we had said that something beautiful had passed that way. . . . I have heard some great speakers and some accomplished orators, but never any that so moved and persuaded men as he. There is a kind of undertow in that rich baritone of his that sweeps our minds from their foothold into deeper waters with a drift we can not and would not resist.

In the opening passage of his essay on "Thoreau," Lowell gives a passing glance at transcendentalism, some sentences from which are here given:

The nameless eagle of the tree Yggdrasil was about to sit at last, and wild-eyed enthusiasts rushed from all sides, each eager to thrust under the mystic bird that chalk egg from which the new and fairer creation was to be hatched in due time. Bran had its prophets, and the presartorial simplicity of Adam its martyrs, tailored impromptu from the tar-pot by incensed neighbors and sent forth to illustrate the feathered Mercury as defined by Webster and Worcester. Some had an assurance of instant millennium so soon as hooks and eyes should be substituted for buttons. Communities were established where everything was to be common but common sense. The belated gift of tongues, as among the Fifth-Monarchy men, spread like a contagion, rendering its victims incomprehensible to all Christian men; whether equally so to the most distant possible heathen or not was unexperiented, though many would have subscribed liberally that a fair trial might be made. It was the Pentecost of Shinar. Many foreign revolutionists out of work added to the general misunderstanding their contribution of broken English in every most ingenious form of fracture. All stood ready at a moment's notice to reform everything but themselves.

Of Thoreau he says:

As we walk down Park Street our eye is caught by Dr. Winship's dumb-bells, one of which bears an inscription testifying that it is the heaviest ever put at arm's length by any athlete; and in reading Thoreau we can not help feeling as if he sometimes invited our attention to a particular sophism or paradox as the biggest yet maintained by any single writer. The radical vice of his theory of life was that he confounded physical with spiritual remoteness from men. A man is far enough withdrawn from his fellows if he keep himself clear of their weaknesses. He is not so truly withdrawn as exiled if he refuse to share their strength.

From 1845 to 1851 Mr. Lowell contributed many reviews and poems to the "Dial," the "Democratic Review," and the "Massachusetts Quarterly Review." In 1851 he went abroad with his wife. They traveled in England, France, and Switzerland, and resided in Italy for some time. Here Mr. Lowell made the study of Dante that revealed that author to many of his countrymen, and enriched his works with many studies and essays on Italian art and literature. Although used by him in his succeeding professorship and not published until much later, these essays belong to this period of his intellectual life, and extracts are in place here:

As a contribution to the physiology of genius no other book is to be compared with the "Vita Nuova." It is more important to the understanding of Dante as a poet than any other of his works. It shows him (and that in the midst of affairs demanding practical ability and presence of mind) capable of a depth of

contemplative abstraction equaling that of a Scoti who has passed the fourth step of initiation. It enables us in some sort to see how, from being the slave of his imaginative faculty, he rose by self-culture and force of will to that mastery of it which is art.

Milton's angels are not to be compared with Dante's, at once real and supernatural; and the Deity of Milton is a Calvinistic Zeus, while nothing in all poetry approaches the imaginative grandeur of Dante's vision of God at the conclusion of the "Paradiso." . . . The range of Dante's influence is no less remarkable than its intensity. . . . Almost all other poets have their seasons, but Dante penetrates to the moral core of those who once fairly come within his sphere and possesses them wholly. His readers turn students, his students zealots, and what was a taste becomes a religion. The homeless exile finds a home in thousands of grateful hearts.

We may admit, with proper limitations, the modern distinction between artist and moralist. With the one form is all in all; with the other tendency. . . . The whole range of perception and thought is valuable to the one, as it will minister to imagination, to the other only as it is available for argument. . . . The results of the moralist pass into the intellectual atmosphere of mankind, it matters little by what mode of conveyance. But where, as in Dante, the religious sentiment and the imagination are both organic, something interfused with the whole being of the man, so that they work in kindly sympathy, the moral will insensibly suffuse itself with beauty as a cloud with light.

To read Lowell's exposition of Dante's character and works is to become possessed with a desire to see in him and them all that Lowell saw. The sympathetic and the practical unfolding of the poet's nature and writings go hand in hand so invitingly that to join the select spiritual and intellectual little company seems like a necessity to those who would know the best, and to fail of it a loss that no other study can repay.

Mr. and Mrs. Lowell came home in 1852, and in October, 1853, Mr. Lowell suffered the bitterest sorrow of his life, in the death of his beautiful, gifted, and devoted wife. Although an invalid for years, she had been his inspiration and his sympathizing critic. She had written a little volume of verses, which was printed privately after her death. Two of her poems—"The Morning Glory" and "The Alpine Shepherd"—became favorites, and still find a place in most American anthologies. In "The Wind-Harp" he has paid one of many tributes to her loveliness, and recorded his own sorrow. The first two stanzas read:

I treasure in secret some long, fine hair
Of tenderest brown, but so inwardly golden
I half used to fancy the sunshine there,
So shy, so shifting, so waywardly rare,
Was only caught for a moment and holden
While I could say *Dearest!* and kiss it, and then
In pity let go to the summer again.

I twisted this magic in gossamer strings
Over a wind-harp's Delphian hollow;
Then called to the idle breeze that swings
All day in the pine-tops, and clings, and sings
'Mid the musical leaves, and said, "Oh, follow
The will of those tears that deepen my words,
And fly to my window to waken these chords."

Much better known is "Auf Wiedersehen," with its beautiful palinode. It is difficult to do it justice in an extract, and still more difficult

to omit so essential a part of his thoughts and words:

The little gate was reached at last,
Half hid in lilacs down the lane;
She pushed it wide, and, as she past,
A wistful look she backward cast,
And said—"Auf wiedersehen!"

The lamp's clear gleam flits up the stair;
I linger in delicious pain;
Ah, in that chamber, whose rich air
To breathe in thought I scarcely dare,
Thinks she—"Auf wiedersehen!"

Sweet piece of bashful maiden art!
The English words had seemed too faint,
But these—they drew us heart to heart,
Yet held us tenderly apart;
She said, "Auf wiedersehen!"

PALINODE.

Still thirteen years—'tis autumn now
On field and hill, in heart and brain;
The naked trees at evening sigh;
The leaf to the forsaken bough
Sighs not—"Auf wiedersehen!"
The loath gate swings with rusty creak;
Once, parting there, we played at pain;
There came a parting, when the weak
And fading lips essayed to speak
Vainly—"Auf wiedersehen!"
Somewhere is comfort, somewhere faith,
Though thou in outer dark remain;
One sweet sad voice ennobs death,
And still, for eighteen centuries saith
Softly—"Auf wiedersehen!"

We should not have the complete picture of this deepest Lowell unless we recalled the Puritan triumph note of the lover's ode and contrasted it with these poems, or more particularly with two others, "After the Burial" and "The Dead House." In that Yankee character which he himself had depicted such faith and exaltation were the complement of such despair and suffering. In "The Dead House," he says:

Unaltered! Alas for the sameness
That makes the change but more!
'Tis a dead man I see in the mirrors,
'Tis his tread that chills the floor!
To learn such a simple lesson,
Need I go to Paris and Rome,
That the many make the household,
But only one the home?
'Twas just a womanly presence,
An influence unexpressed,
But a rose she had worn on my grave-sod
Were more than long life with the rest!
'Twas a smile, 'twas a garment's rustle,
'Twas nothing that I can phrase,
But the whole dumb dwelling grew conscious
And put on her looks and ways.
Were it mine I would close the shutters,
Like lids when the life is fled,
And the funeral fire should mind it,
This corpse of a home that is dead.

Still stronger are the expressions in "After the Burial":

Yes, faith is a goodly anchor;
When skies are sweet as a psalm,
At the bows it lolls so stalwart,
In its bluff, broad-shouldered calm.
And when over breakers to leeward
The tattered surges are hurled,
It may keep our head to the tempest,
With its grip on the base of the world.

But, after the shipwreck, tell me,
What help in its iron thews,
Still true to the broken hawser,
Deep down amid sea-weed and ooze!

In the breaking gulfs of sorrow,
When the helpless feet stretch out
And find in the depths of darkness
No footing so solid as doubt,

Then better one spar of memory,
One broken plank of the past,
That our human heart may cling to,
Though hopeless of shore at last!

To the spirit its splendid conjecturers,
To the flesh its sweet despair,
Its tears o'er the thin-worn locket,
With its anguish of deathless hair!

Immortal? I feel it and know it,
Who doubts it of such as she?
But that is the pang's very secret—
Immortal away from me.

There's a narrow ridge in the grave-yard
Would scarce stay a child in its race,
But to me and my thought it is wider
Than the star-sown vague of space.

Console if you will. I can bear it—
'Tis a well-meant aim of breath—
But not all the preaching since Adam
Has made death other than death.

It is pagan; but wait till you feel it—
That jar of our earth, that dull shock
When the plowshare of deeper passion
Tears down to our primitive rock.

Two other phases of suffering have found utterance in "The Darkened Mind," "The First Snow-fall," and "Threnodia." The first alluded to the insanity of his unusually keen-witted and joyous-hearted mother, the others to the death of his children. Longfellow's poem "The Two Angels" was drawn forth by the fact that one of Longfellow's children was born the night that Mrs. Lowell died.

The volume that contains these poems has two other notable ones, "Pictures from Appledore" and the "Ode to Happiness." A long-lined, somewhat heavy movement has hindered these (or at least the former) from becoming the favorites which their beauty of thought and imagination would make them. "Appledore" is difficult to select from, but this will perhaps present its best of any extract:

A common island, you will say;
But stay a moment: only climb
Up to the highest rock of the isle,
Stand there alone for a little while,
And with gentle approaches it grows sublime
Dilating slowly as you win
A sense from the silence to take it in.
So wide the loneliness, so lucid the air,
The granite beneath you so lucidly bare,
You well might think you were looking down
From some sky-silenced mountain's crown,
Whose waist-belt of pines is wont to tear
Locks of wool from the topmost cloud.
Only be sure you go alone,
For Grandeur is in accessibly proud,
And never yet has backward thrown
Her veil to feed the stare of a crowd;
To more than one has never shown
That awful front, nor is it fit
That she, Cothurnus-shod, stand bowed
Until the self-approving pit
Enjoy the gust of its own wit
In babbling plaudits cheaply loud;
She hides her mountains and her sea
From the harriers of scenery,

Who hunt down sunsets, and huddle and bay,
Mouthing and mumbling the dying day.

To quote the beautiful lines of the "Ode to Happiness" would be to quote them all. The best that can be done in these limits is to give single lines or expressions:

And passed from eager hand to hand
The onward-dancing torch of life!

Thou first revealst to us thy face
Turned o'er the shoulder's parting grace,
A moment glimpsed, then seen no more—
Thou whose swift foot-steps we can trace
Away from every mortal door.

Nymph of the unreturning feet.

Souls that with long upward beat
Have won an undisturbed retreat.

—the cliff
That o'er the abrupt gorge holds its breath
Where the frail hair's-breadth of an if
Is all that sunders life and death.

Unhistorical as smokes that rise
From happy hearths and sight elude
In kindred blue of morning skies.

Yet there is one who seems to be
Thine elder sister, in whose eyes
A faint, far northern light will rise.

I am she
Whom the gods love, Tranquillity;
That other whom you seek forlorn
Half earthly was; but I am born
Of the immortals, and our race
Wears still some sadness on its face.

For a taste of a totally different quality, we turn to "Without and Within":

My coachman, in the moonlight there,
Looks through the side-light of the door;
I hear him with his brethren swear,
As I could do—but only more.

Flattening his nose against the pane,
He envies me my brilliant lot,
Breathes on his aching fists in vain,
And dooms me to a place more hot.

Meanwhile I only curse the bore
Of hunting still the same old coon,
And envy him, outside the door,
In golden quiet of the moon.

The winter wind is not so cold
As the bright smile he sees me win,
Nor the host's oldest wine so old
As our poor gabble sour and thin.

Oh, could he have my share of din,
And I his quiet! past a doubt
'Twould still be one man bored within.
And just another bored without.

In January, 1855, Mr. Longfellow resigned his professorship in Harvard College, and Mr. Lowell was elected to take his place. He did not enter upon it immediately, but spent two years abroad, continuing studies in Italian, French, and Spanish, devoting himself especially to old French and Provençal poetry, in which he became one of the highest authorities. On his return, he assumed the chair of Belles Lettres.

The "Atlantic Monthly" was founded in this year, 1857, and Lowell became its first editor; Holmes, Longfellow, and Emerson being, with him, the projectors of the enterprise, which was planned at meetings of the quartet in Emerson's cheery study in Concord. In 1863 he became

joint editor, with Charles Eliot Norton, of the "North American Review," a connection which lasted until 1872. In these periodicals appeared the "Moosehead Journal," "Cambridge Thirty Years ago," "Notes of Travel," and the fragment "Fitz Adam's Story."

Meantime the political events that preceded and led up to the civil war were of the keenest interest to him, and, in order to throw the weight of his influence on the side of the Union, he brought Hosea Biglow and Parson Wilbur again upon the stage, their utterances being given to the world in the pages of the "Atlantic Monthly." In his introduction to the new poems of Hosea Biglow, Parson Wilbur says: "I write by express desire of Mr. Biglow himself, whose entire winter leisure is occupied, as he assures me, in answering demands for autographs, a labor exacting enough in itself, and egregiously so to him, who, being no ready penman, can not sign so much as his name without strange contortions of the face (the nose even being essential to complete success) and painfully suppressed Saint-Vitus's dance of every muscle of the body." Mr. Wilbur introduces a letter from Mr. Biglow's friend, Mr. Sawin, who had settled in Virginia after the Mexican War. It opens:

It's some consid'ble of a spell sence I hain't writ no letters,
An' ther's gret changes hez took place in all polit'-cle matters;
Some canderdates air dead an' gone, an' some hez ben defeated,
Which 'mounts to pooty much the same; fer it's ben proved repeated
A betch o' bread thet hain't riz once ain't goin' to rise agin,
An' it's jest money throwed away to put the emptin's in:
But thet's wut folks won't never larn; they dunno how to go,
Arter you want their room, no more'n a bullet-headed beau;
Ther's ollers chaps a-hangin' roun' thet can't see pea-time's past,
Mis'ble as roosters in a rain, heads down an' tails half-mast;
It ain't disgraceful bein' beat, when a holl nation does it,
But chance is like an amberill—it don't take twice to lose it.

His description of matters down South is followed the next month by the famous "Yankee Idyl," "Mason and Slidell." The "Idyl" is introduced by a long rhymed dialogue between Bunker Hill Monument and Concord Bridge, which brims over with wit. In the course of it, the monument remarks:

"Ef we're a-goin' to prove we *be* growd-up, 'Twun't be by barkin' like a tarrier pup, But turnin' to an' makin' things ez good Ez wut we're allers *braggin'* that we could; We're boun' to be good friends, and so we'd oughter, In spite of all the fools both sides the water."

The bridge replies:

"I b'lieve thet's so; but harken in your ear, I'm older'n you—Peace won't keep house with Fear. Ef you want peace, the thing you've gut to du Is jes' to show you're up to fightin', tu. I recollect how sailors' rights was won, Yard locked in yard, hot gun-lip kissin' gun.

Why, afore thet John Bull sot up thet he Hed gut a kind o' mortgage on the sea; You'd thought he held by grand'ther Adam's will, An' ef you knuckle down, he'll think so still."

Some stanzas of the "Idyl" read as follows:

Ef I turn mad dogs loose, John,
On *your* front-parlor stairs,
Would it jest meet your views, John,
To wait an' sue their heirs?
Ole Uncle S. sez he, "I guess
I on'y guess," sez he,
"Thet ef Vattel on *his* toes fell,
'Twould kind o' rile J. B.,
Ez wal ez you an' me!

Who made the law thet hurts, John,
Heads I win—ditto tails?
"J. B." was on his shirts, John,
Unless my memory fails.
Ole Uncle S. sez he, "I guess,
(I'm good at thet)," sez he,
"Thet sauce for goose ain't *jest* the juice
For ganders with J. B.,
No more'n with you or me!"

We own the ocean, tu, John,
You musn't take it hard,
Ef we can't think with you, John,
It's jest your own back yard.
Ole Uncle S. sez he, "I guess,
Ef *thet's* his claim," sez he,
"The fencin' stuff 'll cost enough
To bust up friend J. B.,
Ez wal ez you an' me!"

An argument that was put forward in sober earnest by many is put in the following fashion by Mr. Sawin in a letter to Hosea Biglow:

Warn't it more profit'able to bring your raw material thru
Where you can work it into grace an' into cotton tu,
Than sendin' missionaries out where fevers might defeat 'em,
An' ef the butcher didn't call, their p'rishioners might eat 'em?

The next installment closes with the following lines:

I—but, gen'lemen, here's a dispatch jes come in,
Which shows thet the tide's begun turnin' agin'—
Great Confedrit success! O'lumbus evaacooated!
I mus' run down an' hev the thing properly stated,
An' show wut a triumph it is, an' how lucky
To fin'ly git red o' thet cussed Kentucky,
An' how, sence Fort Donelson, winnin' the day
Consists in triumphantly gittin' away.

Perhaps one of the best-known extracts is from the passage from Hosea Biglow, which begins thus:

Once git a smell o' musk into a draw,
An' it clings hold like precerents in law;
Your gra'ma'am put it there—when, goodness knows—

To jes, this-worldify her Sunday-clo'es;
But the old chist wun't sarve her gran'son's wife.
(For, 'thout new furnitoor, wut good in life?)
An' so ole clawfoot, from the preinks dread
O' the spare chamber, shrinks into the shed,
Where, dim with dust, it fust or last subsides
To holdin' seeds an' fifty things besides;
'But better days stiek fast in heart an' husk,
An' all you keep in't gits a scent o' musk.

Jes so with poets: wut they've airly read
Gits kind o' worked into their heart an' head,
So's'they can't seem to write but jest on sheers
With furrin' countries or played-out ideers,
Nor hev a feelin' ef it doesn't smack
O' wut some critter chose to feel 'way back.

Then follows the famous description of spring in New England, and then more of that sharp, witty satire which probably had more influence in setting things in the right light for the New England mind than the gravest sermons or editorials.

It was not with poetical satire alone that Mr. Lowell attacked slavery and upheld the national cause in the final crash of war. Elegant writings in prose came from his pen, while the subjects they discussed were of burning interest. The fire and zeal of Garrison without his intemperance and disloyalty, the eloquence of Wendell Phillips with far more depth of thought and scholarship, were what he showed, as contrasted with those two constant friends and coworkers, in those days. An article on "The American Tract Society," written in 1858, shows how wide a range his mental eye took in. He writes:

If the pious men who founded the American Tract Society had been told that within forty years they would be watchful of their publications, lest, by inadvertence, anything disrespectful might be spoken of the African slave trade; that they would consider it an ample equivalent for compulsory dumbness on the vices of slavery that their colporteurs could awaken the minds of Southern brethren to the horrors of St. Bartholomew; that they would hold their peace about the body of Cuffee dancing to the music of the cart-whip, provided only they could save the soul of Sambo alive by presenting him a pamphlet, which he could not read, on the depravity of the double-shuffle; that they would consent to be fellow-members in the Tract Society with him who sold their fellow-members in Christ on the auction-block, if he agreed with them in condemning transubstantiation (and it would not be difficult for a gentleman who ignored the real presence of God in his brother man to deny it in the sacramental wafer)—if those excellent men had been told this, they would have shrunk in horror, and exclaimed: "Are thy servants dogs, that they should do these things?" Yet this is precisely the present position of the society. . . . The only line which Christ drew is that which parts the sheep from the goats, that great horizon line of the moral nature of man, which is the boundary between light and darkness. The society, by yielding (as they have done in 1858) to what are pleasantly called the "objections" of the South (objections of so forcible a nature that we are told the colporteurs were "forced to flee"), virtually exclude the black man, if born to the southward of a certain arbitrary line, from the operation of God's providence.

What claim has slavery to immunity from discussion? We are told that discussion is dangerous. Dangerous to what? Truth invites it, courts the point of the Ithuriel spear whose touch can but reveal more clearly the grace and grandeur of her angelic proportions.

In his article on the then pending election, which placed Mr. Lincoln in the presidency, Mr. Lowell said:

The truth is that revolutionary ideas are promoted not by any unthinking hostility to the *rights* of property, but to a well-founded jealousy of its usurpations; and it is privilege, and not property, that is perplexed with fear of change.

In an article entitled "E Pluribus Unum" he wrote:

If secession be a right, then the moment of its exercise is wholly optional with those possessing it. Suppose on the eve of a war with England Michigan should vote herself out of the Union and declare herself annexed to Canada, what kind of a reception would her commissioners be likely to meet in Wash-

ington? . . . Is the only result of our admitting a territory on Monday to be the giving it a right to steal itself and go out again on Tuesday? . . . We shall need something like a fugitive slave law for runaway republics, and must get a provision inserted in our treaties with foreign powers, that they shall help us catch any delinquent who may take refuge with them.

It has sometimes been questioned just what Lowell meant when, in the "Commemoration Ode," he speaks of President Lincoln as the "first American." The commentary on it may perhaps be found in his article on Lincoln, written in 1864:

People of more sensitive organizations may be shocked, but we are glad that in this our true war of independence, which is to free us forever from the Old World, we have had at the head of our affairs a man whom America made, as God made Adam, out of the very earth—unancestried, unprivileged, unknown—to show us how much truth, how much magnanimity, and how much state craft await the call of opportunity in simple manhood when it believes in the justice of God and the worth of man.

In the same article he thus describes a statesman:

The course of a great statesman resembles that of navigable rivers, avoiding immovable obstacles with noble bends of concession, seeking the broad levels of opinion on which men soonest settle and longest dwell; following and marking the almost imperceptible slopes of national tendency, yet always aiming at direct advances, always recruited from sources nearer heaven, and sometimes bursting open paths of progress and fruitful human commerce through what seem the eternal barriers of both. It is loyalty to great ends, even though forced to combine the small and opposing motives of selfish men to accomplish them; it is the anchored cling to solid principles of duty and action, which knows how to swing with the tide, but is never carried away by it, that we demand in public men.

Mr. Lowell took an active interest in public affairs, writing much on reconstruction and kindred themes, and meantime his muse was not silent. "The Washers of the Shroud," written in 1861, was a lament for relatives and friends who were with the Army of the Potomac. One stanza runs:

Tears may be ours, but proud, for those who win
Death's royal purple in the foeman's lines;
Peace, too, brings tears; and 'mid the battle-din
The wiser ear some text of God divines,
For the sheathed blade may rust with darker sin.

"*Memorie Positum*," written in memory of Col. Robert G. Shaw, killed at Fort Wagner in 1863, is a pæan of sorrow, a preliminary study for the magnificent "Commemoration Ode." One stanza reads:

We bide our chance,
Unhappy, and make terms with Fate
A little more to let us wait;
He leads for aye the advance,
Hopes forlorn—hopes that plant the desperate good
For nobler earths and days of manlier mood;
Our wall of circumstance
Cleared at a bound, he flashes o'er the fight,
A saintly shape of fame, to cheer the right
And steel each wavering glance.

The noblest elegiac poem ever produced in our country is the "Commemoration Ode," written by Lowell, and recited by him at the memorial exercises held at Harvard College, in 1865, as a

tribute to the dead and the living among her graduates and students who had gone forth to the war. Other famous elegies in the English language are, of general ones, Gray's "Elegy in a Country Churchyard" and Bryant's "Thanatopsis"; of personal ones, Milton's "Lycidas," Shelley's "Adonais," and Tennyson's "In Memoriam" and "Ode on Wellington." None of these, taken as a whole, outranks Lowell's. Some are more musical in parts, but not one is more musical in all parts, not one grander in thought, tenderer in feeling, more moving in pathos, and certainly not one can compare with it in nobility of theme. One stanza of it reads:

Many loved Truth, and lavished life's best oil
Amid the dust of books to find her,
Content at last, for guerdon of their toil,
With the east mantle she hath left behind her.
Many in sad fate sought for her,
Many with crossed hands sighed for her;
But these, our brothers, fought for her,
At life's dear peril wrought for her,
So loved her that they died for her,
Tasting the raptured fleetness
Of her divine completeness.

The closing stanza reads:

Bow down, dear Land, for thou hast found release!
Thy God, in these distempered days,
Hath taught thee the sure wisdom of his ways,
And through thine enemies hath wrought thy peace.
Bow down in prayer and praise!
No poorest in thy borders but may now
Lift to the juster skies a man's enfranchised brow.
O Beautiful! my Country! ours once more!
Smoothing thy gold of war-disheveled hair
O'er such sweet brows as never other wore,
And letting thy set lips,
Freed from wrath's pale eclipse,
The rosy edges of their smile lay bare,
What words divine of lover or of poet
Could tell our love and make thee know it,
Among the nations bright beyond compare?
What were our lives without thee?
What all our lives to save thee?
We reckon not what we gave thee;
We will not dare to doubt thee,
But ask whatever else, and we will dare!

"The Cathedral" was written in 1869. It has the long-lined monotony which is the one drawback to Lowell's verse, but it is the master's work. The following lines represent it fairly:

Man can not be God's outlaw if he would,
Nor so abscond him in the caves of sense
But Nature still shall search some crevice out
With messages of splendor from that source
Which, dive he, soar he, baffles still and hures.
This life were brutish did we not sometimes
Have intimation clear of wider scope,
Hints of occasion infinite, to keep
The soul alert with noble discontent
And onward yearnings of unstilled desire;
Fruitless, except we now and then divined
A mystery of purpose gleaming through
The secular confusions of the world,
Whose will we darkly accomplish, doing ours.
No man can think nor in himself perceive,
Sometimes at waking, in the street sometimes,
Or on the hillside, always unforwarned,
A grace of being, finer than himself,
That beckons and is gone—a larger life
Upon his own impinging, with swift glimpses
Of spacious circles luminous with mind,
To which the ethereal substance of his own
Seems but gross cloud to make that visible,
Touched to a sudden glory round the edge.

Who that hath known these visitations fleet
Would strive to make them trite and ritual?
I, that still pray at morning and at eve,
Loving those roots that feed us from the past,
And prizing more than Plato things I learned
At that best Academe, a mother's knee,
Thrice in my life, perhaps, have truly prayed,
Thrice, stirred below my conscious self, have felt
That perfect disenchantment which is God;
Nor know I which to hold worst enemy,
Him who on speculation's windy waste
Would turn me loose, stript of the raiment warm
By faith contrived against our nakedness,
Or him who, cruel-kind, would fain obscure,
With pictured saints and paraphrase of God,
The soul's east window of divine surprise.

This poem is Lowell's contribution to the religious controversies of his day, and it suggests a quality in his work, both in verse and prose. His life history and thought can be traced through his writings to an unusual degree. Whether he writes directly of principles or directly of particular men, the discussions are always really of ideas, and his own reach and progress of conviction can be traced.

In this year (1869) Lowell wrote also two characteristic essays, one of which, "On a Certain Condescension in Foreigners," is perhaps the most popular of his writings. The other is "My Garden Acquaintance," which embodies his love for nature in his own quaint fashion. In closing it, he writes:

There is something inexpressibly dear to me in these old friendships of a lifetime. There is scarce a tree of mine but has had, at some time or other, a happy homestead among its boughs, and to which I can not say:

"Many light hearts and wings,
Which now be dead, lodged in thy living bowers."

My walk under the pines would lose half its summer charm were I to miss that shy anchorite, the Wilson's thrush, nor hear in haying time the metallic ring of his song that justifies his rustic name of *scythe-whet*. I protect my game as jealously as an English squire. If anybody had oölogized a certain cuckoo's nest I know of, it would have left me a sore place in my mind for weeks. . . . I would not if I could convert them from their pretty pagan ways.

In the opening of the other essay there is a lovely picture of twilight quiet and the charm of association:

All things combined in a result as near absolute peace as can be hoped for by a man who knows that there is a writ out against him in the hands of the printer's devil. . . . I love old ways, and the path I was walking felt kindly to the feet it had known for almost fifty years. . . . How many times I had lingered to study the shadows of the leaves mezzotinted upon the turf that edged it by the moon, of the bare boughs etched with a touch beyond Rembrandt by the same unconscious artist on the smooth page of snow. . . . "Blessed old fields!" I was just exclaiming to myself, when I was interrupted by a voice which asked me in German whether I was the Herr Professor, Doctor, so and so?

One feels so intimately assured that one is made up in part of shreds and leavings of the past, in part of the interpolations of other people, that an honest man would be slow in saying *yes* to such a question. I had begun life with the theory of giving something to every beggar that came along. . . . I was but too conscious of a vagrant fiber in myself which often thrilled me in my solitary walks with a temptation to wander on into infinite space. . . . For seven years I helped maintain one heroic man on an imaginary

journey to Portland—as fine an example as I have ever known of hopeless loyalty to an ideal. I assisted another so long in a fruitless attempt to reach Mecklenburg-Schwerin that at last we grinned in each other's faces when we met like a couple of augurs. . . . I could not help associating the apparition of my new friend with this series of otherwise unaccountable phenomena. I accordingly made up my mind to deny the debt. . . . He took a high tone with me at once. . . . He even brought down his proud stomach so far as to join himself to me for the rest of my homeward walk, that he might give me his views of the American people.

But whatever we might do or leave undone, we were not genteel. . . . Though we should boast that we were the Great West until we were black in the face, it would not bring us an inch nearer to the world's west end. . . . In short, we were vulgar. . . . "How am I vulgar?" asks the culprit shrinkingly. "Because thou art not like unto us," answers Lucifer, Son of the Morning.

So long as we continue to be the most common-schooled and the least cultivated of people in the world, I suppose we must consent to endure this condescending manner of foreigners toward us. They can never appreciate the immense amount of silent work that has been done here, making this continent slowly fit for the abode of man. A great place in history can only be achieved by competitive examinations—nay, by a long course of them. . . . The common blood, and still more the common language, are fatal instruments of misapprehension. Let them give up trying to understand us.

From the essay on *Chaucer*, written in 1870, we take the following characteristic sentence:

Modern imaginative literature has become so self-conscious, and therefore so melancholy, that art, which should be "the world's sweet inn," whither we repair for refreshment and repose, has become rather a watering-place, where one's own private touch of liver complaint is exasperated by the affluence of other sufferers whose talk is a narrative of morbid symptoms. Poets have forgotten that the first lesson of literature, no less than of life, is the learning how to burn your own smoke; that the way to be original is to be healthy; that the fresh color, so delightful in all good writing, is won by escaping from the fixed air of self into the brisk atmosphere of universal sentiments, and that to make the common marvelous, as if it were a revelation, is the test of genius.

The following passage from his essay on Pope, written in 1871, suggests another phase in his intellectual development:

I confess that I come to the treatment of Pope with diffidence. I was brought up in the old superstition that he was the greatest poet that ever lived; and when I came to find that I had instincts of my own, and my mind was brought in contact with the apostles of a more esoteric doctrine of poetry, I felt that ardent desire for smashing the idols I had been brought up to worship, without any regard to their artistic beauty, which characterizes youthful zeal. What was it to me that Pope was called a master of style? I felt, as Addison says in his "Freeholder," when answering an argument in favor of the Pretender, because he could speak English and George I could not, that I "did not wish to be tyrannized over in the best English that ever was spoken." The young demand thoughts that find an echo in their real and not their acquired nature, and care very little about the dress they are put in. It is later that we learn to like the conventional, as we do olives. There was a time when I could not read Pope, but disliked him on principle. . . . I have since read over every line that Pope ever wrote, and every letter written by or to him, and that more than once. If I have not come to the conclusion that he is the greatest of poets, I believe that I am at least in a condition to allow him every merit that is fairly his.

If every literary American could say something like this with truth, we should soon cease to be the "most common-schooled and the least cultivated of people." In 1872 Mr. Lowell visited Europe, with his second wife, Miss Frances Dunlap, of Portland, Me, whom he had married in 1857. On his return the "Centennial" celebrations of 1875-'76 appealed to his patriotism and local sympathy, and he wrote several odes, two of which were read by him at Concord and under the old elm at Cambridge; but they have none of the fire and moving power of the "Commemoration Ode." In 1876 Mr. Lowell was a presidential elector on the Republican ticket, and in the following year he was appointed United States minister at Madrid. Washington Irving had held this office in 1842-'46. In 1880 he was transferred to the court of St. James. Here a representative American found opportunity to maintain the simple dignity of his country, and he did it to that country's credit and to his own great satisfaction. There were no diplomatic questions to be argued; and if in the round of social successes his countrymen sometimes felt that he became more English than the Englishmen themselves, they did not lose their admiration of him. He may be judged by his own written words, for, in addition to constant calls for after-dinner and off-hand speeches, he was invited to deliver addresses on many public occasions. One of the most delightful and original of his essays is that upon "Don Quixote," the notes for which were read at the Working Men's College, in London. By reading one paragraph an opinion may be formed of his judgment of the purpose of a book which he considered the work of one of the five greatest authors of the world:

There is a moral in "Don Quixote," and a very profound one, whether Cervantes put it there or not, and it is this: that whoever quarrels with the nature of things, wittingly or unwittingly, is certain to get the worst of it. The great difficulty lies in finding out what the nature of things really and perdurably is, and the great wisdom, after we have made this discovery, or persuaded ourselves that we have made it, is in accommodating our lives and actions to it as best we may or can. And yet, though all this be true, there is another and deeper moral in the book than this. The pathos which underlies its seeming farcical turmoil, the tears which sometimes tremble under our lids after its most poignant touches of humor, the sympathy with its hero, which survives all his most ludicrous defeats and humiliations, and is only deepened by them, the feeling that he is, after all, the one noble and heroic figure in a world incapable of comprehending him, and to whose inhabitants he is distorted and caricatured by the crooked panes in those windows of custom and convention through which they see him—all this seems to hint that only he who has the imagination to conceive, and the courage to attempt a trial of strength with what foists itself on our senses as the order of nature for the time being, can achieve great results or kindle the co-operative and efficient enthusiasm of his fellow-men.

In Exeter Hall, in 1881, at a meeting held in memory of President Garfield, Mr. Lowell said:

This is no place for the turnings and windings of dexterous rhetoric. In the presence of that death scene, so homely, so human, so august in its unostentatious heroism, the commonplaces of ordinary eulogy stammer with the sudden shame of their own ineptitude. . . . Let us thank God and take courage when

we reflect that it was through the manliness, the patience, the religious fortitude of the splendid victim that the tie of human brotherhood was thrilled to a consciousness of its sacred function. . . . The emulation of examples like his makes nations great, and keeps them so. The soil out of which such men as he are made is good to be born on, good to live on, good to die for and to be buried in.

In the same year, in a speech at the meeting in Westminster Abbey in commemoration of Dean Stanley, he said:

I feel especially happy, because it seems to me that my presence here is an augury of that day, which may be distant, but which I believe will surely come, when the character and services of every eminent man of the British race in every land, under whatever distant skies he may have been born, shall be the common possession and the common inheritance, and the common pride of every branch which is sprung from our ancestral stem.

In an address, entitled "Democracy," delivered on the occasion of assuming the presidency of the Birmingham and Midland Institute, in 1884, he said:

I have hinted that what people are afraid of in democracy is less the thing itself than what they conceive to be its necessary adjuncts and consequences. It is supposed to reduce all mankind to a dead level of mediocrity in character and culture: to vulgarize men's conceptions of life, and therefore their code of morals, manners, and conduct; to endanger the rights of property and possession. But I believe that the real gravamen of the charge lies in the habit it has of making itself generally disagreeable by asking the powers that be, at the most inconvenient moment, whether they are the powers that ought to be. If the powers that be are in a condition to give a satisfactory answer to this inevitable question, they need feel in no way discomfited by it. . . . An appeal to the reason of the people has never been known to fail in the long run. . . . There is more rough-and-tumble in the American democracy than is altogether agreeable to people of sensitive nerves and refined habits, and the people take their political duties lightly and laughingly, as is, perhaps, neither unnatural nor unbecoming in a young giant. Democracies can no more jump away from their own shadows than the rest of us can. . . . But democracies have likewise their finer instincts. . . . Institutions that could bear and breed such men as Lincoln and Emerson had surely more energy for good. No, amid all the fruitless turmoil and miscarriage of the world, if there be one thing steadfast and of favorable omen, one thing to make optimism distrust its own obscure distrust, it is the noted instinct in men to admire what is better and more beautiful than themselves.

Of great interest is the address, read before the Edinburgh Philosophical Society, on Shakespeare's Richard III. In the opening paragraph Mr. Lowell says:

Horace Walpole wrote "Historic Doubts" concerning the monarch himself, and I shall take leave to express some about the authorship of the drama that bears his name. . . . There are three special considerations, three eminent and singular qualities of Shakespeare, which more than all, or anything else, I think, set him in a different category from his contemporaries; and it is these that I would apply as tests. The first . . . is his incomparable force and delicacy of poetic expression. . . . One of the surest of these detective clews is this continual cropping-up of philosophical or metaphysical thought in the midst of picturesque imagery or passionate emotion, as if born of the very ecstacy of the language in which it is uttered. The second characteristic, of which I should expect to see some adumbration, at

least . . . would be humor. . . . I mean in the power of pervading a character with humor, creating it out of humor, so to speak, and yet never overstepping the limits of nature or coarsening into caricature. A third characteristic of Shakespeare is eloquence, . . . an eloquence of impassioned thought finding vent in vivid imagery. Of each and all of these we find less in "Richard III," as it appears to me, than in any other of his plays of equal pretension. . . . It seems to me that an examination of "Richard III" plainly indicates that it is a play which Shakespeare adapted to the stage, making additions, sometimes longer and sometimes shorter, and that, toward the end, either growing weary of his work or pressed for time, he left the older author, whoever he was, pretty well to himself.

Mr. Lowell delivered noteworthy addresses on the unveiling of a bust of Coleridge, on the unveiling of a bust of Fielding, on being made President of the Wordsworth Society, and on the dedication of a library in Chelsea. His wife had become an invalid, and in February, 1885, she died. In the same year he was recalled from the mission by President Cleveland. He had been honored with the degree of D. C. L. by the University of Oxford, and that of LL. D. by Cambridge, and he was elected rector of the University of St. Andrews. After his return he resumed his lectures at Harvard. His home was with his only child, Mrs. Edward Burnett, at Southborough, Mass. His feelings when he returned to his country can be read in the postscript to some lines written to his life-long friend, George William Curtis:

Home am I come: not, as I hoped might be,
To the old haunts, too full of ghosts for me,
But to the olden dreams that time endears,
And the loved books that younger grow with years;
To country rambles, timing with my tread
Some happier verse than carols in my head,
Yet all with sense of something vainly mist,
Of something lost, but when I never wist.
How empty seems to me the populous street,
One figure gone I daily loved to meet,
The clear, sweet singer with the crown of snow
Not whiter than the thoughts that housed below!
And, ah, what absence feel I at my side,
Like Dante when he missed his laureled guide,
What sense of diminution in the air
Once so inspiring, Emerson not there!
But life is sweet, though all that makes it sweet
Lessen like sound of friends' departing feet,
And death is beautiful as feet of friend
Coming with welcome at our journey's end;
For me Fate gave, what'er she else denied,
A nature sloping to the southern side;
I thank her for it, though when clouds arise
Such natures double-darken gloomy skies.
I muse upon the margin of the sea,
Our common pathway to the new To Be,
Watching the sails that lessen more and more,
Of good and beautiful embarked before;
With bits of wreck I patch the boat shall bear
Me to that unexhausted Otherwhere,
Whose friendly-peopled shore I sometimes see,
By soft mirage uplifted, beckon me,
Nor sadly hear, as lower sinks the sun,
My moorings to the past snap one by one.

Mr. Lowell's first public address after his return was delivered at Harvard College, on the two hundred and fiftieth anniversary of its founding. It is an especially interesting utterance to those who would study and follow the mental and spiritual life of our American poet. It reveals his love of letters, his attainments in them, his patriotism, his love of the institutions and

influences in which he was reared, his conservatism, his pugnacity, his plain speaking, his tenderness, his refinement, the breadth of thought resulting from foreign residence and success, his modesty, his hopefulness, his pessimism, his elegance and ease of diction—all, in fact, that went

year but as a single grain of the sand in Time's hour-glass and the inscriptions of Egypt and Assyria modern as yesterday's newspaper. Fancy flutters over these vague wastes like a butterfly blown out to sea and finds no foothold. It is true that, if we may put as much faith in heredity as seems reasonable to many of us, we are all in some transcendental sense

The dancing bear.

Far over Elf-land ports stretch their way
And win their dearest crowns beyond the goal
Of their own conscious purpose; they control
With gossamer threads wideflown our fancy's play
And so our action: on my walk today
A wallowing bear begged clumsily his toll
When straight a vision rose of Atla Troll,
And scenes ideal witched mine eyes away.
Merci, Monsieur! the astonished bear-ward cried,
Grateful for thine his hope to me, the slave,
Of partial memory, seeing at his side
A bear immortal; the ~~same~~ glad sole I gave
Was none of mine; poor Heine o'er the wide
Atlantic water reached it from his grave.

11th June, 1875.

FAC-SIMILE OF A SONNET BY JAMES RUSSELL LOWELL.

to make up the personality whose influence is not to die with his departure. In discussing at his opening, the curious blending of disrespect and reverence for old things that characterizes the American of to-day, he says:

If the tablets unearched and deciphered by geology have forced us to push back incalculably the birthday of man, they have in like proportion impover-

ished his recorded annals, making even the Platonic the coevals of primitive man, and Pythagoras may well have been present in Euphorvus at the siege of Troy. . . . Even the landscape sometimes bewitches us by this glamour of the past, and the green pastures and golden slopes of England are sweeter both to the outward and to the inward eye that the hand of man has immemorially cared for and caressed them. . . . I never felt the working of this spell so acutely as in

those gray seclusions of the college quadrangles and cloisters at Oxford and Cambridge, conscious with venerable associations, and whose very stones seemed happier for being there. . . . Are we to suppose that these memories were less dear and gracious to the Puritan scholars at whose instigation this college was founded than to that other Puritan who sang the dim religious light, the long-drawn aisles and fretted vaults which these memories recalled? . . . The pitiful contrast which they must have felt between the carved sanctuaries of learning they had left behind and the watted fold they were rearing here on the edge of the wilderness is to me more than tenderly—it is almost sublimely—pathetic. . . . We come back hither from the experiences of a richer life, as the son who has prospered returns to the household of his youth, to find in its very homeliness a pulse, if not of deeper, certainly of fonder emotion than any splendor could stir. "Dear old mother," we say, "how charming you are in your plain cap and the drab silk that has been turned again since we saw you! You were constantly forced to remind us that you could not give us this and that which some other boys had, but your discipline and diet were wholesome, and you sent us forth into the world with the sound constitutions and healthy appetites that are bred of simple fare." . . . Our Puritan ancestors have been misrepresented and maligned by persons without imagination enough to make themselves contemporary with, and therefore able to understand the men whose memories they strive to blacken. . . . They were the coevals of a generation which passed on in scarcely diminished radiance the torch of life kindled in great Eliza's golden days. Out of the new learning, the new ferment alike religious and national, and the new discoveries with their suggestion of boundless possibility, the alembic of that age had distilled a potent elixir, either inspiring or intoxicating, as the mind that imbibed it was strong or weak. Are we to suppose that the lips of the founders of New England alone were unwetted by a drop of that stimulating draught?—that Milton was the only Puritan that had read Shakespeare and Ben Jonson and Beaumont and Fletcher? I do not believe it, whoever may. . . . I hope, then, that the day will come when a competent professor may lecture here also for three years on the first three vowels of the Romance alphabet and find fit audience, though few. I hope the day may never come when the weightier matters of a language, namely, such parts of its literature as have overcome death by reason of their wisdom and of the beauty in which it is incarnated, . . . are not predominant in the teaching given here. . . . Give us science, too, but give us, first of all and last of all, the science that ennobles life and makes it generous. . . . There is some danger that the elective system may be pushed too far and too fast. . . . We are comforted by being told that in this we are only complying with the spirit of the age, which may be, after all, only a finer name for the mischievous goblin known to our forefathers as Puck. I have seen several spirits of the age in my time of very different voices and summoning in very different directions, but unanimous in their propensity to land us in the mire at last. . . . I know that I am approaching treacherous ashes which cover burning coals, but I must on. . . . One of the arguments against the compulsory study of Greek—namely, that it is wiser to give our time to modern languages and modern history than to dead languages and ancient history—involves, I think, a verbal fallacy. . . . Men are ephemeral or evanescent, but whatever page the authentic soul of man has touched with her immortalizing finger, no matter how long ago, is still young and fair as it was to the world's gray fathers. Oblivion looks in the face of the Grecian muse only to forget her errand. . . . But we must not be impatient; it is a far cry from the dwellers in caves to even such civilization as we have achieved. I am conscious that life has been trying to civilize me for now nearly seventy years with what seems to me very inadequate results. We can not afford to wait, but

the race can. . . . Let our aim be, as hitherto, to give a good, all-around education, fitted to cope with as many exigencies of the day as possible. . . . Let it be our hope to make a gentleman of every youth who is put under our charge; not a conventional gentleman, but a man of culture, a man of intellectual resource, a man of public spirit, a man of refinement, with that good taste which is the conscience of the mind, and that conscience which is the good taste of the soul.

In the following year (1887) Mr. Lowell addressed the Tariff Reform League, of Boston, and in the course of his remarks he said:

If, in a free commonwealth, government by party be a necessary expedient, it is also a necessary evil, an evil chiefly in this, that it enables men—nay, even forces them—to postpone interests of prime import and consequence to secondary and ephemeral, often to personal interests, and not only so, but to confound one with the other. . . . I do not believe that there is a man at this table who for the last twenty years has been able to embody his honest opinion, or even a fraction of it, in his vote. During all those years no thoughtful man has been able to see any other difference between the two great parties which stood between him and the reforms he deemed essential to the well-being of his country than that the one was *in* and wished to stay there, and the other was *out* and *didn't* wish to stay there. . . . Each had an abundance of aces in its sleeve, and each was divided on the two great questions of vital interest to the country—the tariff and finance.

In an address entitled "The Independent in Politics," read before the Reform Club of New York, in 1888, are the following expressions:

When I say that I make no distinctions between the two parties, I must be allowed to make one exception. I mean the attempt by a portion of the Republicans to utilize passions which every true lover of his country should do his best to allay, by provoking into virulence again the happily quiescent animosities of our civil war. In saying this, I do not forget that the Democratic party was quite as efficient in bringing that war upon us as the seceding States themselves. Nor do I forget that it was by the same sacrifice of general and permanent interests to the demands of immediate partisan advantage, which is the besetting temptation of all parties. Let by-gones be by-gones. Yet I may say in passing that there was something profoundly comic in the spectacle of a great party, with an heroic past behind it, stating that its policy would be to prevent some unknown villains from doing something very wicked, more than twenty years ago. . . . If the politicians must look after the parties, there should be somebody to look after the politicians; somebody to ask disagreeable questions and to utter uncomfortable truths; somebody to make sure, if possible, before election, not only what, but whom, the candidate, if elected, is going to represent.

After going more into detail, he sums up thus:

But the tendency of excessive protection which thoughtful men dread most is that it stimulates an unhealthy home competition, leading to overproduction and to the disasters which are its tainted offspring; that it fosters overpopulation, and thus of the most helpless class when thrown out of employment; that it engenders smuggling, false invoices, and other demoralizing practices; that the principle which is its root is the root also of rings and syndicates and trusts, and all other such conspiracies for the artificial raising of profits in the interests of classes and minorities. I confess I can not take a cheerful view of the future of that New England I love so well, when her leading industries shall be gradually drawn to the South, as they infallibly will be, by the greater cheapness of labor there.

There are few themes of vital interest on which Lowell has not spoken, in prose or in verse. We have quoted his utterances on love, patriotism, sorrow, slavery, education and culture, nature, religion, politics, and free trade. Of socialism, science, and faith he treats in the preface to a book entitled "The Progress of the World."

All well-meaning and humane men sympathize with the aims of Lasalle and Karl Marx. All thoughtful men see well-founded and insuperable difficulties in the way of their accomplishment. . . . We have already observed a movement toward the introduction of socialistic theories into both state and national legislation; though if history teach anything it teaches that the true function of government is the prevention and remedy of evils so far only as these depend on causes within the reach of law, and that it has lost any proper conception of its duty when it becomes a distributor of alms.

Of science, he says :

I can not share their fears who are made unhappy by the foreboding that Science is in some unexplained way to take from us our sense of spiritual things. What she may do is to forbid our vulgarizing them by materialistic conceptions of their nature; and in this she will be serving the best interests of truth and of mankind also. . . . Give to Science her undisputed prerogative in the realm of matter, and she must become, whether she will or no, the tributary of Faith. . . . Should the doctrines of natural selection, survival of the fittest, and heredity be accepted as laws of nature, they must profoundly modify the thought of men, and, consequently, their action. But we should remember that it is the privilege and distinction of man to mitigate natural laws, and to make them his partners if he can not make them his servants.

In 1889 Mr. Lowell responded to the toast "Our Literature," at a banquet given in New York in commemoration of the hundredth anniversary of Washington's inauguration. He said, in part :

Scarcely had we become a nation when the only part of the Old World whose language we understood began to ask, in various tones of despondency, where was our literature. We could not improvise Virgils and Miltons, though we made an obliging effort to do it. Failing in this, we thought the question partly unfair and wholly disagreeable. And, indeed, it had never been put to several nations far older than we, and to which a *vates sacer* had been longer wanting. But, perhaps, it was not altogether so ill-natured as it seemed, for, after all, a nation without a literature is imperfectly represented in the parliament of mankind. It implied, therefore, in our case the obligation of an illustrious blood. . . . I admire our energy, our enterprise, our inventiveness, our multiplicity of resource—no man more; but it is by less visibly remunerative virtues, I persist in thinking, that nations chiefly live and feel the higher meaning of their lives. Prosperous we may be in other ways, contented with more specious successes, but that nation is a mere horde supplying figures to the census which does not acknowledge a truer prosperity and a richer contentment in the things of the mind. Railways and telegraphs reckoned by the thousand miles are excellent things in their way, but I doubt whether it be of their poles and sleepers that the rounds are made of that ladder by which men or nations scale the cliffs whose inspiring obstacle interposes itself between them and the fulfillment of their highest purpose and function. The literature of a people should be the record of its joys and sorrows, its aspirations and its short-comings, its wisdom and its folly, the confidant of its soul. We can not say that our own as yet suffices us; but I believe that he who stands

a hundred years hence where I am standing now, conscious that he speaks to the most powerful and prosperous community ever devised or developed by man, will speak of our literature with the assurance of one who beholds what we hope for and aspire after become a reality and a possession forever.

The closing passages of this speech, among his last public utterances, strikingly characterized his own literature, which is, indeed, the record of his joys and sorrows, his aspirations and his short-comings, his wisdom and his folly, the confidant of his soul; and to his countrymen that literature will become a reality and a possession forever.

The following is a complete list of Mr. Lowell's publications: "Class Poem" (Boston, 1838); "A Year's Life" (1841); "Poems" (Cambridge, 1844); "The Vision of Sir Launfal" (Boston, 1845; second edition, 1848, and included in "Vest-pocket Series"); "Conversations on some of the Old Poets" (1845); "Poems" (1848); "The Biglow Papers" (1848); "A Fable for Critics" (1848); "Poems" (2 vols., 1849); "Life of Keats," prefacing an edition of his works (1854); "Poems" (2 vols., 1854) "Poetical Works" (2 vols., 1858); "Mason and Slidel, a Yankee Idyl" (1862); "Fireside Travels" (1864); "The President's Policy" (1864); "Ode recited at the Commemoration of the Living and Dead Soldiers of Harvard University," 21 July, 1865; "The Biglow Papers," second series (1867); "Under the Willows, and other Poems" (1869); "Among my Books" (1870); "The Courtin'" (1874); "Three Memorial Poems" (1876); "Among my Books," second series (1876); and "Democracy, and other addresses" (1887). A new uniform edition of his works (four volumes of poetry and seven of prose) was issued in 1891, to which another volume will probably be added in 1892. Charles Eliot Norton is his literary executor and will write his life. Mr. Lowell's works did not circulate very largely during his lifetime, but for some years there has been a steady increase in their sale. At the public libraries, in the calls for American poets he is surpassed only by Longfellow. Early in 1892 a movement was begun in England for the erection of a testimonial to him in Westminster Abbey.

LUTHERANS. The following is a summary of the statistics of the Evangelical Lutheran Church in America for the year 1891, as they are given in the "Church Almanac," and may be regarded as approximately correct: The Church numbers 61 synods, 4,861 clergymen, 8,232 congregations, and 1,185,116 communicant members, 2,790 parochial schools with 2,454 teachers and 111,777 pupils, 3,748 Sunday schools with 39,183 officers and teachers and 358,178 pupils. The institutions of learning number 24 theological seminaries, having property valued at \$960,800, endowment amounting to \$475,686 (8 having no endowment, but depending for their income on annual gifts of individuals and congregations, and 4 reporting their endowment under the head of colleges or academies), having 66,850 volumes in their libraries, employing 85 professors, and having 900 students; 30 colleges, having property valued at \$1,884,000, endowment amounting to \$721,526 (15 reporting no endowment), 127,600 volumes in their libraries, employing 236 professors and instructors, having 4,086 stu-

dents, of whom 953 have the ministry in view; 35 academies, having property valued at \$482,000, only two reporting endowment amounting to \$20,100, having 10,055 volumes in their libraries, employing 140 instructors, and having 3,431 pupils, of whom 411 have the ministry in view; 12 ladies' seminaries, having property valued at \$252,500, one reporting endowment amounting to \$3,500, having 9,025 volumes in their libraries, employing 92 instructors, and having 893 pupils; making a total of 101 institutions of learning, with property valued at \$3,579,300, endowment amounting to \$1,220,822, volumes in libraries 213,530, professors and instructors 553, and 9,300 students, of whom about 1,000 are women and 2,254 are preparing for the ministry. Besides the institutions already mentioned, there are 34 orphans' homes, having property valued at \$738,828, endowment amounting to \$107,717, and 1,591 inmates; and 38 homes for the aged, homes for deaconesses, hospitals, etc., having property valued at \$1,220,000, 2 of which have endowment funds amounting to \$14,000, the rest are supported by free-will offerings. There are published 137 church periodicals, of which 44 are in English, 53 in German, 16 in Swedish, 13 in Norwegian, 4 in Danish, 3 in Icelandic, 3 in Finnish, and 1 in French.

The Lutheran Church in America, although divided into 4 general bodies and 13 independent synods, has one standard confession, the Augsburg Confession of 1530, which all the district synods and general bodies accept, and it is in so far a united church. But as the general bodies carry on their affairs independently, they are here treated separately.

General Synod.—This is the oldest general body, having been organized in 1821, and is composed almost entirely of English synods and congregations. The thirty-fifth biennial convention of the General Synod of the Evangelical Lutheran Church in the United States of America was held in Zion's Church, Lebanon, Pa., May 20-29, 1891. The opening sermon was delivered by the retiring president, the Rev. Henry W. McKnight, D. D., President of Pennsylvania College, Gettysburg, Pa. After the formal organization of the convention, the Rev. Jacob A. Clutz, D. D., President of Midland College, Atchison, Kan., was elected president. Twenty-seven synods were represented in this convention, with 101 clerical and 90 lay delegates. Four new synods were received into connection with this general body: California Synod, Rocky Mountain Synod, German Synod of Nebraska, and German Synod of California. These were all organized during the current year, on territory formerly occupied by other synods in connection with the same general body.

Much of the time of the convention was devoted to consideration of the reports of the various boards and action on these reports. Following is a summary of the operations of this body. The report of the Board of Foreign Missions was very encouraging. The receipts during the past two years were \$97,453.92. Legacies were received amounting to \$7,544.25; contributions from Sunday schools, \$12,145.31; from the woman's missionary societies, \$17,363.30. The entire amount that passed through the treasurer's hands was \$112,645.21. The expenditures

were \$100,127.54. The work in India is making encouraging progress. The Woman's Missionary Society sent out 3 additional missionaries, the Rev. and Mrs. John Aberly and Miss Amy L. Sadtler. The Rev. Dr. Lemon L. Uhl, after a few years' sojourn and study in the United States, returned to India. During his stay in this country he collected \$18,000 for the Watts Memorial College at Guntur, India. The following is an exhibit of the general status of the mission: 4 missionaries, 2 native pastors, 5 sub-pastors, 19 catechists, 100 sub-catechists, 48 helpers, 6 Bible and tract colporteurs, 371 villages containing native Christians, 2 churches, 135 prayer houses, 6 mission bungalows, 1 printing press and book bindery, 1 free reading room and book depot, 13,566 baptized Christians, 7,952 communicants, 227 Sunday schools with 8,737 pupils, 196 elementary schools with 203 teachers and 3,263 pupils, 2 boarding schools with 125 pupils and Watts Memorial College, the Rev. Luther B. Wolf, president, 28 teachers and 655 students, including Christians, Hindus, and Mohammedans. There are 4 women engaged in zenana work with 4 European and Eurasian assistants and 10 native Bible teachers; 14 zenanas in which instruction is given, with 25 pupils in these; 21 schools, including high-caste Hindu, Mohammedan industrial, and boarding schools, with 79 teachers, 892 pupils, of whom 711 are high-caste Hindus, 128 Mohammedans, and 53 Christians; Bible classes 4, pupils 60, Sunday schools 6 with 300 pupils. The mission in Africa met with some reverses on account of sickness and death among the missionaries and native Christians. A lay missionary, George P. Gall, of Philadelphia, entered upon his labors in the latter part of 1890. Miss Emily Beekin has also been sent out to Africa and is supported by the Woman's Missionary Society. The force of missionaries consists of the Rev. and Mrs. David A. Day and the Rev. David Davidson, a native ordained pastor, besides the two already mentioned, and several young men who have been trained in the mission. The total membership of the mission is 159, of whom 130 are communicants. The Sunday school has 214 pupils. The industrial department of this mission is a most encouraging feature. The members of the mission are all trained to work. The cultivation of coffee, eddoes, sweet potatoes, and cassava are the chief industries of the native Christians. Concerning the work in Africa, the report of the board says: "One community of about 1,500 souls, presided over by a native Christian chief, may be fairly classed as half-civilized. The predatory excursion against these people last year resulted in their organizing a local government, subject to the Republic of Liberia, which will greatly unify and strengthen them. Under the influence of the mission, hundreds of half-civilized people are gradually abandoning their roving habits, and are settling down to agricultural pursuits." The board asked for \$35,000 per annum from the district synods, to carry on their labors in India and Africa. The following action was taken with reference to the distraction and opposition which the India mission has been called upon to suffer:

Whereas, It appears that much time and effort are still required on the part of our missionaries in India

to prevent the spoliation of our congregations by native agents who are in the employ of missionaries sent out to the South Krishna District by the American Baptist Missionary Union; and

Whereas, In 1889, 186 of our members were reported as having gone to other missions, and 459 in 1890, making a total of 645, nearly all joining the Baptists, not because they were convinced that immersion and other Baptist peculiarities were preferable to Lutheran doctrines and practices, but from various motives, such as caste influences, partisan animosity intensified by dismissed teachers, the prospects of temporal help, dislike of the strict administration of our mission, etc.; and

Whereas, One of the methods of procedure is for the native Baptist pastor or catechist to employ one of the more intelligent members of a Lutheran congregation as an agent of the Baptist mission, who, instead of going out into the heathen community to gain converts to Christianity, goes to work among the members of his former church and endeavors to win them over to the Baptist mission; and

Whereas, Another method is for the native Baptist agent to concentrate his efforts on winning over the trustees of property held by the Lutheran congregation, and then instituting legal proceedings for the transfer of the school or prayer house, together with the ground on which they are located, from the Lutheran to the Baptist mission; and

Whereas, Much injury has also been done by the Baptists in receiving into their mission persons who were under discipline in ours, thus making it very difficult for our missionaries to exercise discipline over their people; and

Whereas, It is not claimed that these unfraternal and, indeed, un-Christian methods of work have been employed directly by any of the American Baptist missionaries, three of whom are at present located in our field, but it is a notorious fact that the native agents who are employed and paid by them have been using these and other equally improper methods of gaining proselytes; and

Whereas, A charitable view of the case might lead us to suppose that those native Baptist agents had been acting without the knowledge or sanction of those over them in authority, were it not for the fact that during the past year a number of letters have been addressed to one of the Baptist missionaries, calling his attention to the methods employed by his agents, and courteously but earnestly protesting against them; and

Whereas, In a number of cases in which our missionaries protested against the reception of some of their runaway boarders and disciplined teachers by their Baptist co-workers, the request was unheeded and their communications not even received the courtesy of a reply; therefore be it

Resolved, By the General Synod of the Evangelical Lutheran Church in the United States of America, in convention assembled, that we hereby enter our solemn protest against the continuance of the practices referred to, and with this statement of the interference and proselytism complained of, submit the facts to the moral sense of the Christian world for judgment.

The report of the Board of Home Missions showed that the receipts for the past two years amounted to \$75,974.26, to which is to be added a balance on hand of \$1,075.99. Of the amount received, \$11,557.55 were from legacies, the Woman's Society contributed \$7,487.50, and the Sunday schools \$11,500. The report shows an increase in contributions over the previous two years of \$8,798.63. The board has had 135 missions on its funds, an increase of 21. There were added 36 new mission congregations and 36 new churches purchased or erected. In these 135 missions 151 missionaries were employed, who

report 5,385 new members: their benevolent contributions amounted to \$13,591.81, while the total contributions by missions for salary, local expenses, and benevolence aggregate \$265,275.84. During the same period 18 missions became self-sustaining. The missions under the care of the board during the past two years were located as follows: California, 5; Colorado, 4; Connecticut, 1; District of Columbia, 2; Illinois, 9; Indiana, 5; Iowa, 7; Kansas, 17; Maryland, 9; Missouri, 1; Nebraska, 19; New Jersey, 1; New Mexico, 1; New York, 8; Ohio, 15; Pennsylvania, 28; Tennessee, 1; Wisconsin, 2. Of these, 120 are English, 10 German, 2 Scandinavian, and 3 English and German.

The Board of Church Extension reported receipts amounting to \$79,855.18, legacies amounting to \$10,806.70, and contributions from the Woman's Missionary Society aggregating \$2,475.30. Loans and donations were made to 81 congregations, amounting to \$38,453.61. Fifty-eight lots were secured in important towns and cities, valued at \$20,000. The Western secretary, the Rev. John N. Lenker, visited 326 places in the interest of the work of the board, secured 42 lots for churches, and in 16 congregations aided in starting subscriptions for new churches, this making a total of 97 congregations practically aided by the board. The treasurer reported the assets as \$200,619.66.

The Board of Education reported the institutions under its care—Midland College, Atchison, Kan., and Carthage College, Carthage, Ill.—as prosperous, the assets of the former being \$69,266 and of the latter \$57,156.43. The board also reported that a wealthy member of the Lutheran Church, Augustus Kountze, had offered to give a tract of land in Omaha, Neb., valued at \$100,000, and \$50,000 in cash, for the establishment of a theological seminary in that place, provided the congregations of the General Synod would within the next two years give an additional \$150,000 for the proper equipment of the institution. This offer was gratefully accepted by the general body at this convention, and the board was authorized to make the effort to secure the amount. During one of the sessions of the convention pledges of contributions were received amounting to \$20,710 for the new seminary. In addition, \$5,000 were subscribed for the liquidation of the debt on the Chicago German Theological Seminary.

The report of the Publication Society showed its assets to be \$66,855.68. Its sales for the past two years amounted to \$141,940.98. Its donations to the various boards of the body aggregated \$8,500. Nine new books were published, 19 new books or new editions were issued for their respective authors, 17 new editions of its own publications were issued, and the periodicals of the society for the month of May numbered 229,600 copies.

The Board of Deaconesses presented its first report. The object of this board is to establish deaconess houses, in which women shall be trained for all kinds of lay work—such as hospital work, care of the sick in their own homes, day nurseries, parish visiting, infant schools, etc. The board proposes to send eight or ten women to Kaiserswerth, the mother-house of all similar institutions in the world, where they will

receive a thorough training and be qualified to establish such institutions in this country. This plan of the board was approved by the general body, and authority was given, as far as its means allow, to provide for the establishment of a deaconess house, where the work may be carried on as soon as the probationers return from Germany.

In connection with the report of the Hymn-book Publishing Committee, it appeared that there was a division of sentiment in the 27 district synods of the general body with reference to the common service adopted at a former convention. After a protracted discussion, it was decided to let the forms of both services appear in the Book of Worship, so that congregations may use the one they prefer. The committee also reported the German copy of the service ready for publication; and that, with the committees of the General Council, the United Synod of the South, and the Joint Synod of Ohio, they had made a translation of the Latin edition of the Augsburg Confession; and that as soon as the translation of the German *editio princeps* could be finished the two translations, in parallel columns, would be furnished to the general bodies for acceptance and their disposition. The report of the committee on "A Development of Luther's Small Catechism" led to a protracted discussion on the merits of the proposed work and its doctrinal position. The matter was disposed of by adoption of the following declaration: "That in the preparation and issue of this development of the Small Catechism, should it be finally adopted, it is by no means the intention of the General Synod that it shall in any way change or modify the present doctrinal position of this body."

During one of the sessions of this convention the announcement was officially made that Mrs. Sarah Utermehle, a member of the Church of the Reformation, Washington, D. C., had given 27 acres within the limits of the city to found a "National Lutheran Home for the Aged." The property is valued at \$30,000, and is deeded to an incorporated board of trustees. The conditions are that a building shall be begun within two years, and be completed within five years. Hon. Frank W. Howbert, of Colorado Springs, Col., has given ten acres in the Garden of the Gods as a site for an "Invalid Lutheran Ministers' Home," on condition that within two years a suitable building be erected on it, at a cost of not less than \$5,000. Both of these gifts were accepted.

With reference to the observance of the Church year in the Sunday-school lessons, the following was put on record:

In accordance with the recommendation of the General Synod that the chief festivals of the Church be appropriately observed in our congregations, and by inference in our Sunday schools, we are happy to note a more general observance of these festival days. In most instances in our schools, so far as your committee could learn, the regular lesson of the International course is either laid aside or made to inculcate the lesson of the day. Your committee need not inform the General Synod that the sentiment is growing rapidly in all our Protestant churches that the leading Christian festivals should be observed. Representative men in all denominations have petitioned the committee on the International Sunday-school Lessons "to recognize not the whole Christian year,

but a few of its leading landmarks," urging them "to recognize at least Christmas, Easter, and Whitsunday, by the appointment of lessons appropriate to these seasons." In the judgment of your committee, it would not be wise at such a juncture to take any step in our General Synod that would retard this growing sentiment. Just when all our Protestant pulpits are seeing the propriety of using Christmas themes at Christmas seasons, and Resurrection themes at Easter, it would be impolitic to adopt any measures looking to a separation from the great Protestant communions.

When the matter of co-operation with other bodies for a religious exhibit at the Columbian Exposition was presented, the following resolutions were adopted:

Whereas, The General Synod has heard with pleasure that the Evangelical Alliance, in co-operation with the various evangelical bodies of this country, proposes to indicate in a fitting way at the Columbian Exposition the religious progress of the nation; therefore,

Resolved, That we cordially indorse this movement, and invite the hearty co-operation and support of our churches.

At a subsequent session the directors of the Publication Society were instructed to arrange for a proper exhibit of the work of the body, as they may deem best. A resolution strongly opposing the proposition to open the Exposition on Sundays was adopted.

Resolutions strongly condemning the practice of other Protestant denominations in "sending missionaries among Lutheran people in Europe under the name of foreign-mission work, and spending scores of thousands of dollars annually simply to transfer these Christians from one evangelical Church to another, while hundreds of millions of heathen are still without the knowledge of the saving gospel of Christ," were adopted.

Following are the general statistics of this body: 27 district synods, 1,005 ministers, 1,448 congregations, and 154,540 communicant members; 16 parochial schools, 3 teachers, and 585 pupils; 1,367 Sunday schools, 19,526 officers and teachers, and 153,708 scholars; 5 theological seminaries; 4 colleges; 2 academies; and 2 orphans' homes. The thirty-sixth convention of the body will be held in Canton, Ohio, beginning May 24, 1893.

General Council.—This body, organized in 1867 and consisting of English, German, and Swedish pastors and congregations, held its twenty-third convention in the Church of the Holy Trinity, Buffalo, N. Y., Oct. 14-20, 1891. This is one of the largest bodies of the Lutheran Church in America, representing, according to the latest statistics, 9 district synods (one synod not yet in organic connection with it), 979 ministers, 1,631 congregations, and 283,834 communicant members; maintaining 410 parochial schools, 392 teachers, and 18,779 pupils; 1,306 Sunday schools, 14,866 officers and teachers, and 162,179 scholars. Its membership is scattered through nearly all the States and Territories and the Dominion of Canada. It has 3 theological seminaries, 7 colleges, 5 academies, one school for girls, and ladies' departments in 5 of the colleges, and 24 orphans' homes, deaconess institutions, hospitals, and immigrant missions.

The opening sermon was delivered by the Rev.

Joseph A. Seiss, D. D., LL. D., pastor of the Church of the Holy Communion, Philadelphia. The district synods were represented by 59 clerical and 46 lay delegates. After the formal organization of the convention, the Rev. Gottlob F. Kretel, D. D., LL. D., of New York city, was re-elected president.

The Church Book Committee presented the completed new edition of the Church Book. It includes, besides the liturgical services, the orders for ministerial acts, which, after being printed in provisional form, were carefully revised and approved for publication. In the preparation of this book with the common service various additions not comprised in that service were found necessary. The number of psalms has been largely increased, and additional canticles have been inserted. It was also deemed desirable to append to the English Church Book a limited number of additional hymns. A sub-committee has been co-operating with committees of the United Synod of the South, the General Synod, and the Joint Synod of Ohio, in the preparation of a new English translation of the Augsburg Confession and Luther's Small Catechism. Much work was done by individual members of the committee, so that in the new English Church Book of the General Council could be included a new translation of the Augsburg Confession, made from the Latin *editio princeps* of 1530, and based on Richard Taverner's English translation of 1536. To enable the committee to complete its work, the Council authorized a new translation, from the German *editio princeps*, of the Augsburg Confession (Melancthon had prepared two copies of the Confession, in German and Latin, for presentation to the Emperor; hence both are of equal authority as confessional writings), which is to be printed with the translation from the Latin in parallel columns.

In close connection with the work of the Church Book Committee is that of the Committee on Sunday-school Work. The Council years ago authorized its own series of lessons for Sunday schools, based on the Church year. The committee reported that the lessons authorized by the Council were regularly published, prepared for publication by members of the committee, aided in special departments by the Rev. William Wackernagel, D. D., and the Rev. Solomon E. Ochsenford, and that they were issued in the "Church Lesson Leaf" and the "Helper," together with a supplemental leaf for the fifth Sundays of the months; and that these leaves were published, as heretofore, by the Lutheran Book Store, Philadelphia. The committee was instructed to continue its work.

The Board of Foreign Missions presented its report through the secretary, the Rev. William Ashmead Schaeffer, of Philadelphia. The missionary operations are carried on in the Madras Presidency of India, with Rajahmundry, Samulcotta, Tallapudi, Dowlaishwaram, and Bhimawaram as centers. Following are the latest statistics: 5 ordained missionaries, 5 wives of missionaries also actively engaged in various departments of the mission, 2 zenana workers, 2 native pastors, 89 teachers and catechists, 6 districts, 127 villages, 3,056 baptized members, 978 communicants, and 1,473 pupils in the various schools.

The name of the boarding school has been changed to that of seminary, and the standard of scholarship has been advanced. This school consists of both day and boarding pupils. Here are found the more advanced scholars, and those who desire to become teachers are here prepared. On March 4, 1891, 21 young men were graduated at the seminary. In 1890 a zenana mission was begun, and Miss Agnes I. Schade, of Water Cure, Pa., and Miss Kate S. Sadtler, of Baltimore, Md., were sent out to India to carry on this branch of mission work. During 1891 the Rev. and Mrs. Calvin F. Kuder were sent out. Rev. Kuder is to take charge of the mission schools, in place of the Rev. Pohl, of the Brecklum mission, who had been loaned to this mission until a superintendent of the schools could be secured. The receipts of the board for the past two years amounted to \$25,351.60, and from the treasurer of the "Missionsbote" were received \$1,606.10. The expenditures amounted to \$29,978.63. The work of missions was again commended to the attention of the churches.

The work of home missions is carried on by the district synods within their respective territories and by three general mission boards, English, German, and Swedish, on territory beyond the bounds of the synods. The following is a summary of the general and local work for two years: 262 missionaries, 462 churches and stations, 33,917 communicant members in mission congregations, and contributions amounting to \$123,053. The English board has missions in Boston, Mass., Newark, N. J., Cleveland and Toledo, Ohio, Decatur, Ill., Milwaukee, Wis., Duluth, Red Wing, Minneapolis, and St. Paul, Minn., Fargo, N. Dak., Salt Lake City, Utah, Portland, Ore., and Tacoma and Seattle, Wash. The German board has numerous missions in the provinces of Manitoba, Assiniboia, and Alberta, Canada, and in Kentucky and Alabama. The Swedish board carries on missionary operations among its countrymen in nearly every State and Territory, the latter board spending annually more than \$15,000 for this work. The educational work of this body has received a new impulse by the opening of a new theological seminary in Chicago, with property that is valued at \$50,000.

The superintendent of the Lutheran Emigrant House in New York city reported for one year the reception and entertainment of 12,144 immigrants. The receipts for this work amounted to \$16,270.75, and the expenditures to \$14,800.20, both items being for one year. The property of this mission is valued at \$100,000, and the mission is free of debt.

The English Synod of the Northwest, organized in 1891, was accorded representation, but action on its reception was deferred until the next convention.

The General Council put itself on record as opposed to the opening of the Columbian Exposition on Sundays.

The twenty-fourth convention of the Council will be held in Fort Wayne, Ind., in 1892.

Synodical Conference.—This general body, organized in 1872, and consisting almost exclusively of German pastors and congregations, held no convention in 1891. Following is a summary of the latest statistics: It consists of 4 synods.

1,368 ministers, 2,002 congregations, and 399,309 communicant members; 1,472 parochial schools, 1,306 teachers, and 80,981 pupils; 183 Sunday schools and about 20,000 pupils, though the latter figures are far from being correct. There are maintained 4 theological seminaries, 6 colleges, 6 academies, and 13 orphans' homes, hospitals, etc. This body is engaged in missionary operations among the freedmen of the South, having congregations and schools in Arkansas, Louisiana, Virginia, and Illinois, 7 stations with 604 members, and 6 schools with 631 pupils. Missionary operations are also carried on among the Jews in this country. Following are the latest statistics of home missions for one year: 200 missionaries, 703 churches and stations, 36,800 communicant members in missions, and receipts for this work amounting to \$81,500.24.

United Synod.—This body, organized in 1886 and consisting of English synods, held no convention in 1891. It is composed of 8 district synods, 201 ministers, 396 congregations, and 36,189 communicant members; 312 Sunday schools, 2,658 officers and teachers, and 22,977 scholars. On its territory are the following institutions: 1 theological seminary, 5 colleges, 8 academies, 8 ladies' seminaries, and 2 orphans' homes. Its home missionary operations are summarized in the following figures: 11 missionaries, 15 churches and stations, 1,500 communicant members in missions, and contributions amounting to \$4,000. During the year this body sent out its first foreign missionary to establish a mission station in Japan.

The ever-increasing number of Lutheran immigrants and the rapid anglicizing of these foreigners and their descendants lays heavy responsibilities upon the Church in this country, and the resources of the Lutheran Church are strained to their utmost. New congregations are being organized all over the country, at the rate of about one for each day in the year, and more could be organized if the Church had command of the necessary men and means. So much of this work is carried on by individual congregations, conferences, and district synods, that it is impossible to obtain accurate statistics of the results. The following is an approximately correct summary of the statistics for the two past years: 818 missionaries, 2,353 churches and stations, 114,754 communicant members in mission congregations, and \$364,527.14 contributed by the churches for this work.

LYTTON, EDWARD ROBERT BULWER, Earl of, an English poet and diplomatist, born in England, Nov. 8, 1831; died in Paris, France, Nov. 24, 1891. He was the only son of Edward Lytton Bulwer, the famous novelist. The son was educated at Harrow and by private tutors, finishing his course of study at the University of Bonn, Germany, where he devoted himself especially to modern languages. He was but seventeen years old when he became private secretary to his uncle, Sir Henry Bulwer, who was British minister at Washington. In 1852 he was transferred as *attaché* to Florence, Italy, and in 1854 was removed to the embassy at Paris. While here he published his first work, "Clytemnestra, the Earl's Return, the Artist, and other Poems," under the pen-name of "Owen Meredith." "Clytemnestra" is a

long dramatic poem, and, in connection with the others, was well received by the critics, though it made no general reputation for the



EDWARD ROBERT BULWER LYTTON.

author with the unknown name. This little volume contained one of the most charming of his poems, that entitled "Good-night in the Porch," which shows the melodious versification of which he became master:

A little longer in the light, love, let me be. The air is warm.

I hear the cuckoo's last good-night float from the copse below the farm.

A little longer, sister, sweet, your hand in mine on this old seat.

In yon red gable, which the rose creeps round and o'er, your casement shines Against the yellow west, o'er those forlorn and solitary pines.

The long, long day is nearly done. How silent all the place has grown!

Yes, sad indeed it seems, each night—and sadder, dear, for your sweet sake!

To watch the last, low lingering light, and know not where the morn may break.

To-night we sit together here. To-morrow night will come—ah, where?

And there's my epic—I began when life seemed long, though longer art—

And all the glorious deeds of man made golden riot in my heart.

Eight books—it will not number nine! I die before my heroine.

Sister! they say that drowning men in one wild moment can recall

Their whole life long, and feel again the pain—the bliss—that thronged it all;

Last night those phantoms of the past again came crowding round me fast.

Once more the garden where she walked on summer eves to tend her flowers,

Once more the lawn where first we talked of future years in twilight hours,

Arose; once more she seemed to pass before me in the waving grass.

So lovely, so beloved! Oh, fair as though that sun
had never set
Which staid upon her golden hair, in dreams I seem
to see her yet!
To see her in that old green place—the same hush,
smiling, cruel face!

A little older, love, than you are now; and I was
then a boy;
And wild and wayward-hearted, too; to her my pas-
sion was a toy,
Soon broken! ah, a foolish thing—a butterfly with
crumpled wing!

A life's libation lifted up, from her proud lip she
dash'd untasted;
There trampled lay love's costly cup, and in the dust
the wine was wasted.
She knew I could not pour such wine again at any
other shrine.

I thought I held in my hot hand my life crusht up;
I could have tost
The crumpled riddle from me, and laugh'd loud to
think what I had lost.

A bitter strength was in my mind; like Samson
when she scorned him—blind,

And casting reckless arms about the props of life to
hug them down—
A madman with his eyes put out; but all my anger
was my own.

I spared the worm upon my walk; I left the white
rose on its stalk.

One handful of their buoyant chaff exceeds our
hoards of careful grain;
Because their love breaks through their laugh, while
ours is fraught with tender pain.
The world, that knows itself too sad, is proud to
keep some faces glad.

Forgive me, Lord, if overmuch I loved that form
thou mad'st so fair;
I know that thou didst make her such; and fair but
as the flowers were—
Thy work: her beauty was but Thine; the human
less than the divine.

Oh, to be where the meanest mind is more than
Shakespeare! where one look
Shows more than here the wise can find, though toil-
ing slow from book to book!
Where life is knowledge, love is sure, and hope's
brief promise made secure.

In 1856 Lytton was promoted to be paid *attaché* at the Hague. Two years afterward he was appointed paid *attaché* at St. Petersburg, and two months later was sent in the same capacity to Constantinople. In 1859 he was transferred to Vienna. While there he was acting consul-general at Belgrade, and was also employed on a special mission to keep peace between the Turks and the Servians, after the Turkish bombardment of the Servian capital. In 1861 he published, anonymously, a poem written in collaboration with Hon. Julian Fane, called "Tannhäuser, or the Battle of the Bards." The names affixed were "Edward Trevor" and "Neville Temple."

As a result of his studies during this residence, he also published a little volume of translations, or rather paraphrases, from the Servian language, entitled "Serbski Pesme." In the "Introduction" he says:

In the following poems no attempt has been made at accurate verbal translation from the original lan-

guage. They can not, indeed, be called translations in the strict sense of the word. What they are, let the reader decide. What they are meant to be is nothing more than a rude medium through which to convey to other minds something of the impression made upon my own by the poetry of a people among whom literature is yet unborn; who in the nineteenth century retain, with the traditions, many also of the habits and customs of a barbarous age; and whose social life represents the struggle of centuries to maintain, under the code of Mahomet, the creed of Christ. It is, indeed, this strange intermixture of Mahometan with Christian association which gives to the poetry of the Serbs its most striking characteristic. It is the sword of a Crusader in the scabbard of a Turk. That, however, which mainly distinguishes this from all other contemporary poetry with which I am acquainted is the evidence borne on the face of it of an origin, not in the heads of the few, but in the hearts of all. This is a poetry of which the People is the Poet.

The opening poem is a long ballad, "The Battle of Kossovo." One of the lyrics denominated by Lord Lytton "Popular or Domestic" is called "Love and Sleep," and runs:

I walkt the high and hollow wood, from dawn to
even-dew,
The wild-eyed wood stared on me, and unclaspt, and
let me through,
Where mountain pines, like great black birds, stood
percht against the blue.

Not a whisper heaved the woven roof of those warm
trees;
All the little leaves lay flat, unmoved of bird or
breeze;

Day was losing light all round, by indolent degrees.
Underneath the brooding branches, all in holy shade,
Unseen hands of mountain things a mossy couch had
made;
There asleep among pale flowers my beloved was
laid.

Slipping down, a sunbeam bathed her brows with
bounteous gold,
Unmoved upon her maiden breast her heavy hair
was rolled,
Her smile was silent as the smile on corpses three
hours old.

"O God!" I thought, "if this be death, that makes
not sound or stir!"
My heart stood still with tender awe, I dared not
waken her,
But to the dear God, in the sky, this prayer I did
prefer:

"Grant, dear Lord, in the blessed sky, a warm wind
from the sea,
To shake a leaf down on my love, from yonder leafy
tree;
That she may open her sweet eyes, and haply look on
me."

The dear God, from the distant sea, a little wind re-
least,
It shook a leaflet from the tree, and laid it on her
breast.
Her sweet eyes oped and looked on me. How can I
tell the rest!

He remained four years in Vienna, being promoted from first paid *attaché* to second secretary of légation. During this time he issued a volume of poems, entitled "The Wanderer," the pieces being grouped under the title of the country in which they were written: "In Italy," "In France," "In England," "In Holland." The "Prologue" is one of his most characteristic

productions. The following is the beginning of it:

Sweet are the rosy memories of the lips,
That first kissed ours, albeit they kiss no more:
Sweet is the sight of sunset-sailing ships,
Although they leave us on a lonely shore:
Sweet are familiar songs, though Music dips
Her hollow shell in Thought's forlornest wells:
And sweet, though sad, the sound of midnight bells,
When the op'd casement with the night-rain drips.
There is a pleasure which is born of pain:
The grave of all things hath its violet.
Else why, through days which never come again,
Roams Hope with that strange longing, like Regret?
Why put the posy in the cold dead hand?
Why plant the rose above the lonely grave?
Why bring the corpse across the salt sea-wave?
Why deem the dead more near in native land?
Thy name hath been a silence in my life
So long, it falters upon language now,
O more to me than sister or than wife
Once . . . and now—nothing! It is hard to know
That such things have been, and are not, and yet
Life lingers, keeps a pulse at even measure,
And goes upon its business and its pleasure,
And knows not all the depths of its regret.

The following is the first stanza of one of the poems in the section "In France," which is entitled "Progress":

When Liberty lives loud on every lip,
But Freedom moans,
Trampled by Nations whose faint foot-falls slip
Round bloody thrones;
When, here and there, in dungeon and in thrall,
Or exile pale,
Like torches dying at a funeral,
Brave natures fail;
When Truth, the armed archangel, stretches wide
God's tromp in vain,
And the world, drowsing, turns upon its side
To drowse again;
O Man, whose course hath called itself sublime
Since it began,
What art thou in such dying age of time,
As man to man!

In an entirely different vein, but belonging to the same period, is the poem "Astarte":

When the latest strife is lost, and all is done with,
Ere we slumber in the spirit and the brain,
We drowse back, in dreams, to days that life begun
with,
And their tender light returns to us again.

I have cast away the tangle and the torment
Of the cords that bound my life up in a mesh:
And the pulse begins to throb that long lay dormant
'Neath their pressure; and the old wounds bleed
afresh.

And again she comes, with all her silent graces,
The lost woman of my youth, yet unpossessed:
And her cold face so unlike the other faces
Of the women whose dead lips I since have prest.

I remember to have murmured, morn and even,
"Though the Earth dispart these Earthlies, face
from face,
Yet the Heavenlies shall surely join in Heaven,
For the spirit hath no bonds in time or space.

"Where it listeth, there it bloweth; all existence
Is its region; and it houseth, where it will.
I shall feel her through immeasurable distance,
And grow nearer and be gathered to her still."

Earth's old sins press fast behind me, weakly wailing:

Faint before me fleets the good I have not done:
And my search for her may still be unavailing
'Mid the spirits that are passed beyond the sun.

Many of Lord Lytton's poems bear evidence of religious fervor and longing. Among those in this volume is one on the Scripture passage, "Ye seek Jesus of Nazareth which was crucified: he is risen; he is not here":

If Jesus came to earth again,
And walked, and talked, in field, and street,
Who would not lay his human pain
Low at those heavenly feet?

And leave the loom, and leave the lute,
And leave the volume on the shelf,
To follow him, unquestioning, mute,
If 'twere the Lord himself?

How many a brow with care o'erworn,
How many a heart with grief o'erladen,
How many a youth with love forlorn,
How many a mourning maiden,

Would leave the baffling earthly prize
Which fails the earthly, weak endeavor,
To gaze into those holy eyes,
And drink content forever!

The last book of "The Wanderer," called "Palingenesis," opens thus:

My Saviour, dare I come to thee,
Who let the little children come?
But I? . . . my soul is faint in me!
I come from wandering to and fro
This weary world. There still his round
The Accuser goes; but thee I found
Not anywhere. Both joy and woe
Have passed me by. I am too weak
To grieve or smile. And yet I know
That tears lie deep in all I do.
The homeless that are sick for home
Are not so wretched. Ere it break,
Receive my heart; and for the sake,
Not of my sorrows, but of thine,
Bend down thy holy eyes on mine,
Which are too full of misery.

The next year he published, still under his pen-name of Owen Meredith, "Lucile," a novel in verse. The dedication to his father explains his feeling about the poem:

I dedicate to you a work, which is submitted to the public with a diffidence and hesitation proportioned to the novelty of the effort it represents. For in this poem I have abandoned those forms of verse with which I had most familiarized my thoughts, and have endeavored to follow a path on which I could discover no footprints before me, either to guide or to warn.

There is a moment of profound discouragement which succeeds to prolonged effort; when, the labor which has become a habit having ceased, we miss the sustaining sense of its championship, and stand, with a feeling of strangeness and embarrassment, before the abrupt and naked result. As regards myself, in the present instance, the force of all such sensations is increased by the circumstances to which I have referred. And in this moment of discouragement and doubt my heart instinctively turns to you, from whom it has so often sought, from whom it has never failed to receive, support.

Feelings only such as those with which, in days when there existed for me no critic less gentle than yourself, I brought to you my childish manuscripts—feelings only such as those which have, in later years, associated with your heart all that has moved or occupied my own—lead me once more to seek assurance

from the grasp of that hand which has hitherto been my guide and comfort through the life I owe to you.

And as in childhood, when existence had no toil beyond the day's simple lesson, no ambition beyond the neighboring approval of the night, I brought to you the morning's task for the evening's sanction, so now I bring to you the self-appointed task-work of maturer years; less confident indeed of your approval, but not less confident of your love; and anxious only to realize your presence between myself and the public, and to mingle with those severer voices to whose final sentence I submit my work the beloved and gracious accents of your own.

From many fine philosophical passages in the poem we select two:

O source of the holiest joys we inherit,
O Sorrow, thou solemn, invisible spirit!
Ill fares it with man when, through life's desert sand,
Grown impatient too soon for the long-promised land,
He turns from the worship of thee, as thou art,
An expressless and imageless truth in the heart,
And takes of the jewels of Egypt, the pelf
And the gold of the godless, to make to himself
A gaudy, idolatrous image of thee,
And then bows to the sound of the cymbal the knee.

The sorrows we make to ourselves are false gods:
Like the prophets of Baal, our bosoms with rods
We may smite, we may gash at our hearts till they
bleed,
But these idols are blind, deaf, and dumb to our need.
The land is athirst, and cries out! . . . 'tis in vain;
The great blessing of Heaven descends not in rain.

Through all symbols I search for her sweetness—in
vain!

Judge her love by her life. For our life is but love
In act. Pure was hers: and the dear God above,
Who knows what his creatures have need of for life,
And whose love includes all loves, through much
patient strife
Led her soul into peace. Love, though love may be
given

In vain, is yet lovely. Her own native heaven
More clearly she mirrored, as life's troubled dream
Wore away; and love sighed into rest, like a stream
That breaks its heart over wild rocks toward the
shore

Of the great sea which hushes it up evermore
With its little wild wailing. No stream from its source
Flows seaward, how lonely soever its course,
But what some land is gladdened. No star ever rose
And set, without influence somewhere. Who knows
What earth needs from earth's lowest creature? No
life

Can be pure in its purpose and strong in its strife
And all life not be purer and stronger thereby.
The spirits of just men made perfect on high,
The army of martyrs who stand by the Throne
And gaze into the Face that makes glorious their own,
Know this, surely, at last. Honest love, honest sor-
row,
Honest work for the day, honest hope for the morrow—
Are these worth nothing more than the hand they
make weary,
The heart they have saddened, the life they leave
dreary?

Hush! the sevenfold heavens to the voice of the Spirit
Echo: He that o'ercometh shall all things inherit.

In January, 1863, he was transferred to Copenhagen as secretary of legation, where he was also *chargé d'affaires*, and in 1864 he was sent in the same capacity to Athens. In October of that year he married Edith, second daughter of Hon. Edward Villiers, and niece of the Earl of Clarendon. As if to complete the round of foreign courts, Lord Lytton was again transferred, this

time to Lisbon, and here he again served as *chargé d'affaires*. He successfully concluded the negotiation of a commercial treaty between Great Britain and Portugal, and, in 1868, was transferred to Madrid. In 1869 he had published his only work in prose, a novel entitled "The Ring of Amasis." In 1869 he was promoted to the secretaryship of legation at Vienna, again serving as *chargé d'affaires*. At this time he published "Orval, or the Fool of Time," a dramatic poem paraphrased from the Polish, and founded on the "undivine comedy" of Count N. A. Z. Krasinski, "Nie-boska Komedya"; the volume also contained imitations and paraphrases in verse from Greek, Latin, Italian, and Danish literature. Another transference, in 1872, was to Paris, as secretary of embassy. He was often left in entire charge serving as minister plenipotentiary. While there he succeeded to the title, as second Baron Lytton, on the death of his father, in 1873. He declined the governorship of Madras, and was then appointed Her Majesty's minister at Lisbon in 1874. While there he published a volume of poems, entitled "Fables in Song," and a memorial of his father, called, "Speeches of Edward, Lord Lytton, with some of his Political Writings, hitherto unpublished, and a Prefatory Memoir by his Son." In 1876 he was appointed Viceroy of India, and in 1877 he presided at the ceremonies held on the plains of Delhi, at the proclamation of Queen Victoria as Empress of India. In the same year he was honored with the Grand Cross of the civil division of the Order of the Bath. Lady Lytton was one of a small number who were given the Order of the Imperial Crown of India, and their eldest son, Victor Alexander George Robert, at the Queen's suggestion, was made her godson. In 1880 Lord Lytton was created Earl of Lytton and Viscount Knebworth. In the same year he offered his resignation as Viceroy of India.

He was afterward minister to France. In 1881 appeared "Julian Fane, a Memoir," written to commemorate his deceased friend, who had been his collaborator in "Tannhäuser" and other literary work. In 1883 appeared in two volumes "The Life, Letters, and Literary Remains of Edward Bulwer, Lord Lytton," and in 1885 "Glen-averil," a poem in two volumes. In 1887 appeared "After Paradise, or Legends of Exile." The following extract is from "The Apple of Life," one of his finest poems:

He mused, as he went, "Life is good:
But not life in itself. It is well while the wine-cup
is hot in the blood,
And a man goeth whither he listeth, and doeth the
thing that he will,
And liveth his life as he lusteth, and taketh in free-
dom his fill
Of the pleasure that pleaseth his humor, and feareth
no snare by the way.
Shall I care to be loved by a queen, if my pride with
my freedom I pay?
Better far is a handful of quiet than both hands,
though filled to o'erflow
With pride, in vexation of spirit. And sweeter the
roses that blow
From the wild seeds the wind, where he wanders,
with heedless beneficence flings,
Than those that are guarded by dragons to brighten
the gardens of kings.
Let a man take his chance, and be happy. The hart
by the hunter pursued,

That far from the herd on the hill-top bounds swift
 through the blue solitude,
 Is more to be envied, though death with his dart fol-
 low fast to destroy,
 Than the tame beast that, pent in the paddock, tastes
 neither the danger nor joy
 Of the mountain, and all its surprises. The main
 thing is, not to live *long*,
 But to *live*. Better moments of rapture soon ended
 than ages of wrong.
 Life's feast is best spiced by the flavor of death in it.
 Just the one chance
 To lose it to-morrow the life that a man lives to-day
 doth enhance.
 The may-be for me, not the must-be! Best flourish
 while flourish the flowers,
 And fall ere the frost falls. The dead, do they rest or
 arise with new powers?
 Either way, well for them. Mine, meanwhile, be the
 cup of life's fullness to-night.
 And to-morrow . . . Well, time to consider" (he felt
 at the fruit). "What delight
 Of his birthright had Esau, when hungry? To-day
 with its pottage is sweet.
 For a man can not feed and be full on the faith of to-
 morrow's baked meat."

Among minor poems is the following typical
 one, entitled "Changes":

Whom first we love, you know, we seldom wed.
 Time rules us all. And life, indeed, is not
 The thing we planned it out ere hope was dead.
 And then, we women can not choose our lot.
 Much must be borne which it is hard to bear:
 Much given away which it were sweet to keep.
 God help us all! who need, indeed, his care.
 And yet, I know, the Shepherd loves his sheep.
 My little boy begins to babble now
 Upon my knee his earliest infant prayer.
 He has his father's eager eyes, I know.
 And, they say, too, his mother's sunny hair.
 But when he sleeps and smiles upon my knee,
 And I can feel his light breath come and go,
 I think of one (Heaven help and pity me!)
 Who loved me, and whom I loved, long ago,—

Who might have been . . . ah, what I dare not think!
 We all are changed. God judges for us best.
 God help us do our duty, and not shrink,
 And trust in Heaven humbly for the rest.
 But blame us women not, if some appear
 Too cold at times; and some too gay and light.
 Some griefs gnaw deep. Some woes are hard to bear.
 Who knows the past? and who can judge us right?
 Ah, were we judged by what we might have been,
 And not by what we are, too apt to fall!
 My little child—he sleeps and smiles between
 These thoughts and me. In heaven we shall know all!

Owen Meredith has been severely criticised as
 a plagiarist, and there is some show of truth in
 the charge. The plot of his "Lucile" is bor-
 rowed from a novel of George Sand's. The
 striking likeness between his "Bird at Sunset"
 and Bryant's "To a Waterfowl" has been point-
 ed out many times, but few of the critics appear
 to have noticed the fact that Lytton's is by far
 the finer poem. Martha Walker Cook, who
 translated Krasinski's "Undivine Comedy" (Phil-
 adelphia, 1875), accused Lytton of knowing far
 more than he acknowledged of this poem, and of
 borrowing very largely from it in his "Orval."
 In the preface to that poem he had said that he
 had never seen the Polish work, did not even
 know the name of its author, and had simply
 used an analysis of it which he found in the
 "Revue des Deux Mondes." Whatever may be the
 truth of all these indictments, it is certain that,
 when every deduction has been made for them,
 the unquestionably original work that is still
 left gives him very high rank as a poet. Among
 his English contemporaries, Browning and Ten-
 nyson alone surpassed him.

Lord Lytton died in Paris, where his funeral
 was attended with great ceremony, 3,500 troops
 being detailed by the French Government as
 escort. His wife and five children—two sons and
 three daughters—survive him. In England the
 service was attended with every mark of con-
 sideration.

M

MACDONALD, SIR JOHN ALEXANDER,
 a Canadian statesman, born in Glasgow, Scot-
 land, Jan. 11, 1815; died in Ottawa, Canada,
 June 6, 1891. He was the eldest son of Hugh
 Macdonald, of Kingston, Ontario, formerly of
 Sutherlandshire, Scotland, and was educated at
 the Grammar School, Kingston. He married
 (first) Isabella, daughter of Alexander Clark, of
 Dalnavert, Inverness-shire, Scotland (she died
 in 1856), and (second, in 1867) Susan Agnes,
 daughter of T. J. Bernard, a member of Her Maj-
 esty's Privy Council for the Island of Jamaica.
 He studied law with George Mackenzie, was
 called to the bar of Upper Canada in 1836, and
 was appointed Queen's counsel in 1846. He was
 a bencher *ex officio* of the Law Society of On-
 tario. He entered parliamentary life in Novem-
 ber, 1844, when he became member of the Cana-
 dian Assembly for Kingston, which constituency
 he represented uninterruptedly until the union
 of the provinces in 1867. He was returned for
 the same seat for the Commons of the Dominion
 of Canada at the general election of 1867, in 1872,

and in 1874; was unseated on petition, Nov. 21,
 1874; re-elected, Dec. 29, 1874; contested the
 city of Kingston in 1878, when he was defeated;
 but immediately afterward was elected by accla-
 mation for Marquette, Manitoba, which seat he
 vacated on acceptance of office as Premier and
 Minister of the Interior, Oct. 17, 1878. He was
 then elected for Victoria, British Columbia; was
 elected for Carlton and Lennox in 1882 (double
 return), and decided to sit for the former con-
 stituency: was elected for Carlton and Kingston
 in 1887, decided to sit for the latter, and was re-
 elected for Kingston in 1891.

He became a member of the Executive Coun-
 cil (Cabinet) of Canada, on May 11, 1847, and so
 continued until March 10, 1848 (in the adminis-
 tration of the Hon. W. Morris); from Sept. 11,
 1854, to July 29, 1858, in the McNab-Morin, the
 Taché-Macdonald, and the Macdonald-Cartier
 administrations; from Aug. 6, in the latter year,
 to May 29, 1862, in the Cartier-Macdonald ad-
 ministration; and from March 30, 1864, until the
 union, in the Taché-Macdonald and the Belleau-

Macdonald administrations. He was Receiver General from May 21 to Dec. 7, 1847; Commissioner of Crown Lands from the latter date to March 10, 1848; Attorney-General for Upper Canada from Sept. 11, 1854, to July 29, 1858, when as Prime Minister he and his Cabinet resigned, having been defeated on the seat-of-government question. He returned to office the same year as Postmaster-General, but he resigned on the following day, on his reappointment as Attorney-General, U. C., which office he held until the defeat of the Administration on the Militia bill, May, 1862, when he and his colleagues retired from office. He led the opposition in the Assembly until the defeat of the Sandfield Macdonald-Dorion ministry, when the Taché-Macdonald Government was formed, March 30, 1864, and he returned to his old office of Attorney-General, and was Government leader in the Assembly from that time until the union of the provinces, 1867. He held the office of Minister of Militia Affairs jointly with that of Attorney-General from January to May, 1862, and from August, 1865, until the union. He was requested to take the place of Sir E. P. Taché as Prime Minister on the death of that gentleman in 1865, but waived his claim in favor of Sir N. F. Belletun. He was a delegate to England and other countries on public business on many occasions; was a delegate to the conference in Charlotte-town in 1864, which had been convened for the purpose of effecting a union of the maritime provinces; also to that which succeeded, in Quebec, the same year, to arrange a basis of union of all the British North American colonies; and was chairman of the London Colonial Conference in 1866-'67, when the act of union known as the "British North American act" was passed by the Imperial Parliament. On July 1, 1867, when the new Constitution came into force, he was called upon to form the first Government for the new Dominion, was sworn of the Privy Council, and was appointed Minister of Justice and Attorney-General of Canada, an office which he filled until he and his ministry resigned on the Pacific Railway charges, Nov. 6, 1873. On the resignation of the Mackenzie administration, October, 1878, he formed the Government that he continued to lead until the day of his death, in which he at first took the portfolio of Minister of the Interior. He resigned this office and became President of the Council and Superintendent of Indian Affairs on Oct. 17, 1883. He resigned these portfolios Nov. 28, 1889, and became Minister of Railways and Canals, which office he held until he died.

Although, in his public career, the name of Sir John sometimes appears as that of an official subaltern, it is noteworthy that from first to last he was the actual Premier and the inspiring and controlling genius in every ministry in which he held a portfolio, and for over forty years he was virtually ruler of Canada. In 1871 Sir John was appointed one of Her Majesty's joint high commissioners and plenipotentiaries, together with Earl de Grey, Sir Stafford Northcote (afterward Marquis of Ripon), Sir Edward Thornton, and Right Hon. Montague Bernard, to act in connection with five commissioners named by the President of the United States for the settlement of the Alabama claims and of matters in dispute be-

tween Great Britain and the United States, the labors of which commission resulted in the Treaty of Washington. The following are among the principal measures that have been carried through Parliament by him: Secularization of the clergy reserves; abolition of the seigniorial tenures; improvement of the criminal law; promotion of public instruction; consolidation of the statutes; extension of the municipal system; reorganization of the militia; settlement of the seat-of-government question; establishment of direct steam mail communication with Europe; establishment of additional penitentiaries, criminal lunatic asylums, and reformatory prisons, and providing for the inspection thereof; providing for the internal economy of the House of Commons; reorganization of the civil service on a permanent basis; construction of the Intercolonial Railway; enlargement of the canals; enactment of a stringent election law; ratification of the Washington Treaty; confederation of British North America and extension and consolidation of the Dominion. He also, while leader of the Opposition, on several occasions manfully gave his ministerial opponents the benefit of his ability and long experience in perfecting several of their most important measures, notably the Insolvent act and the act constituting the Supreme Court of the Dominion. During the summer of 1880, in company with the Ministers of Railways and Agriculture, he visited England and arranged the contract for the construction of the Canadian Pacific Railway, to which Parliament gave effect. He attended the conference held in London on Nov. 18, 1884, at which the Imperial Federation League was formed, and he moved the appointment of a general committee to conduct its affairs. He was a D. C. L. of Oxford University, also of Queen's University, Kingston, and McGill College, Montreal, and Trinity College, Toronto.

Sir John A. Macdonald has been compared with Sir Robert Walpole and Lord Beaconsfield, but with scant justice to the former. In the completeness, length, and durability of his success as a statesman he has had no predecessor in the history of constitutional government. His prestige was the growth of half a century, and at least three generations of Conservatives had grown up trained to believe in him. He had overcome all his political foes, and again and again led his party to victory. No leader ever surpassed him in inspiring affection among his followers. The love for him of those who knew him well was filial, and unfairness, cruelty, ingratitude were unable to shake their attachment. Yet he was personally liked by his political opponents almost to a man, and at the last many a life-long political foe sobbed as he passed by the remains of the great chieftain. His very mistakes were taken as strokes of genius; and the sinister means, soothing to the envy of the mass, to which he at times resorted, came to be regarded as the necessary adjuncts of statesmanship. From his failings his virtues, in the "general censure," took no corruption. Sir John was created a Knight Commander of the Bath (civil) in July, 1867, and a Knight Grand Cross of the Bath in November, 1884; also a Knight Grand Cross of the Royal Order of *Isabel la Católica* (of Spain) in January, 1872. He was nominated a member of

Her Majesty's Most Honorable Privy Council in July, 1872, and sworn in August, 1879. Since his decease, his widow has been created a baroness in her own right. This is, with one exception, the first instance of a colonial peer, or peeress, being created by the British sovereign. The exception was Lord Mount Stephen, ex-President of the Canadian Pacific Railway Company. A steel-plate portrait of Sir John was published in the "Annual Cyclopædia" for 1882.

MAINE, a New England State, admitted to the Union March 15, 1820; area, 33,040 square miles. The population, according to each decennial census, was 298,269 in 1820; 399,455 in 1830; 501,793 in 1840; 583,169 in 1850; 628,279 in 1860; 626,915 in 1870; 648,936 in 1880; and 661,086 in 1890. Capital, Augusta.

Government.—The following were the State officers during the year: Governor, Edwin C. Burleigh, Republican; Secretary of State, Nicholas Fessenden; Treasurer, George L. Beal; Attorney-General, Charles E. Littlefield; Commissioner of Industrial and Labor Statistics, Samuel W. Matthews; Superintendent of Common Schools, Nelson A. Luce; Railroad Commissioners, Asa W. Wildes, Roscoe L. Bowers, and David M. Mortland; Board of State Assessors, chosen by the State Legislature in April, Frank Gilman, Otis Hayford, and B. F. Chadbourne; Chief Justice of the Supreme Court, John A. Peters; Associate Justices, Charles W. Walton, William W. Virgin, Artemas Libbey, Lucilius A. Emery, Enoch Foster, Thomas H. Haskell, and William P. Whitehouse.

Finances.—The treasury statement for 1890 is as follows: Cash on hand Jan. 1, 1890, \$62,678.41; receipts during the year, \$1,495,367.03; expenditures, \$1,382,579.27; cash balance on Dec. 31, 1890, \$175,466.17. During 1890 a temporary loan of \$300,000 was negotiated, as authorized by chapter cxxlvi of the Resolves of 1889, it being found that the receipts would not meet the expenditures, owing to the extraordinary appropriations made by the Legislature of 1889. Of this loan, \$250,000 was negotiated with the German Savings Bank in New York and \$50,000 with the German Savings Bank of Brooklyn, both loans bearing interest at 4 per cent. per annum, payable semi-annually. There is, in addition to this temporary debt, a permanent bonded debt of \$2,602,300.

For 1891 the estimated receipts of the State treasury were \$1,266,298.17, and the estimated expenditures \$1,457,303.85. The State tax rate is 2-25 mills on the dollar.

Valuations.—The first report of the Board of State Assessors, created this year by act of the Legislature, shows the total valuation of property, as fixed by the local assessors, to be \$260,716,167.

Savings Banks.—At the close of 1891 there were 53 savings banks in the State, having deposits amounting to \$50,278,452.44, a gain during the year of \$2,497,285.54. The total number of depositors was 146,668, a gain of 6,147.

Twelve trust and banking companies are transacting business in the State, with a capital stock of \$1,008,900. They have deposits amounting to \$2,516,143.38, an increase of \$390,112.09; and total assets of \$4,279,477.44, a gain of \$649,581.67. The loan associations show a total of

6,710 shareholders, and total assets of \$1,032,301.53, an increase in the past year of \$399,242.22.

Legislative Session.—The sixty-fifth Legislature convened on Jan. 7 and adjourned on April 3. An important result of the session was the passage of an Australian ballot law which applies to all elections after Sept. 1, 1892. The official ballots to be used under this act shall be printed at the expense of the State, except in municipal elections, when the expense shall be borne by the city. Candidates for office may be nominated by a convention or caucus of any political party that polled at least 1 per cent. of the total vote cast in the last gubernatorial election in the State or in the district for which they are to be elected, or by nomination papers duly signed by at least 1,000 voters, if the candidate is to be voted for through the State at large, or by at least 1 for every 100 persons voting at the last gubernatorial election within the district for which the nomination is made, in case of other candidates, provided that the number of signers shall not be fewer than 25. Such nomination papers shall be filed with the city clerk, if the candidate seeks a municipal office; in other cases, with the Secretary of State. Each candidate must signify in writing his acceptance of the nomination. The names of candidates nominated by any party shall be grouped together upon the ballot, headed by the name of the party. A blank space shall be left after the names of candidates for each office, in which the voter may write other names for whom he desires to vote, and questions submitted to the people shall be printed below the list of candidates. Each ballot shall be not less than 4 inches wide and not less than 6 inches long, and shall be so folded in marked creases that the width and length shall be uniform. On the back and outside shall be printed the words, "Official ballot for," followed by the designation of the polling place for which the ballot is prepared, the date of the election, and a *fac simile* of the signature of the Secretary of State or the city clerk preparing the ballots. Cards of instruction and specimen ballots on tinted paper shall be printed for the guidance of voters. Lists of candidates nominated shall be published prior to the election. The municipal officers in each city, town, or plantation shall cause the polling places therein to be provided with voting shelves or compartments in which voters may mark their ballots screened from observation. The voter shall prepare his ballot secretly at the voting shelf or compartment by marking a cross opposite the name of the candidate for whom he wishes to vote, writing in any name if he wishes, or he may place his cross opposite the name of a party or political designation, and he shall then be deemed to have voted for all the candidates of that party or designation grouped thereunder. He shall fold his prepared ballot as it was when he received it, and deposit it forthwith.

To avoid any question respecting the scope of the prohibitory law growing out of the "original-package" decision of the United States Supreme Court and the passage of the Wilson bill by Congress, an act was passed declaring that the statutes in force respecting intoxicating liquors shall be "made to apply to all intoxicating liquors imported in the original package."

Amendments were made to these statutes by which the penalty for importing liquors into the State, or transporting them from place to place therein, was increased to \$500 and one year's imprisonment in case of persons, and to \$500 in case of corporations. In all cases the knowledge of any servant shall be the knowledge of the corporation. Officers may search the persons as well as the premises of people complained of, and if any fluids are poured out or otherwise destroyed by such people to prevent their seizure, such fluids shall be deemed to be intoxicating liquors. County attorneys, as well as sheriffs, are directed to inquire into any violation of these laws coming to their notice, and to institute proceedings thereunder.

The report of the State Valuation Commission, created by the Legislature of 1889, was received at this session, and adopted as the valuation of the State for purposes of taxation. It presents a total valuation of \$309,096,041.

Another act creates a Board of State Assessors, consisting of three members chosen by the Legislature, and, except in case of the first members, holding office for six years. This board is required to perform all duties now required by law to be done by the Governor and Council relative to the assessment and taxation of railroad corporations and associations, and all corporations, companies, and persons doing telegraph, telephone, and express business within the State, and shall assess all taxes upon corporate franchises. Such board shall equalize the State tax among the several towns and unorganized townships, shall fix the valuation of real and personal estate on which the State and county taxes are to be levied, and shall perform the duties heretofore devolving upon the Legislature in apportioning State taxes among the towns. The board shall hold sessions in every county at least once in two years, for the purpose of securing information for its work, and shall file with the Secretary of State biennially a State valuation as fixed by it. This valuation shall be the basis for apportioning the State and county taxes. The board shall equalize and adjust the assessment list of each town by adding to or deducting from it such amount as will make it equal to its full market value.

On the basis of the census of 1890 the State was redistricted for members of Congress as follows:

First District, York and Cumberland Counties.

Second District, Oxford, Franklin, Androscoggin, Sagadahoc, Knox, and Lincoln.

Third District, Kennebec, Somerset, Waldo, and Hancock.

Fourth District, Penobscot, Piscataquis, Aroostook, and Washington.

The State was also redistricted for members of the State Senate and House of Representatives.

A board of World's Fair managers was established, with authority to represent the State and procure a proper exhibit of her industries and resources and history at the World's Columbian Exposition, for that purpose having power to appoint an executive commissioner and to fix his salary. The sum of \$40,000 was appropriated to carry out the provisions of the act.

An act for the protection of forests requires every railroad company whose road passes

through forest or waste land to remove or destroy each year all inflammable material on its right of way, and to equip its locomotives with fire and spark arresters. Train officers who discover fences or woods along the track to be on fire must report the fact at the next stopping place which is a telegraph station. Hunters in any woodland are required to use non-combustible wads in loading their fire-arms, and persons building camp-fires in or near any woods shall not abandon them until they are totally extinguished. The selectmen of each town are made *ex officio* forest fire wardens, with authority to summon all necessary help in extinguishing forest fires in their town. The county commissioner shall appoint fire wardens for all unorganized places. The State land agent is made a State forest commissioner, whose duty it shall be to collect and classify statistics relating to the forests of the State. The commissioner shall also take measures for awakening an interest in forestry in the public schools, academies, and colleges, and for imparting elementary instruction upon the subject.

Two amendments to the State Constitution were proposed for submission to the people in September, 1892—the first amending section 3, Article VII, so that the Governor, and not the Legislature in joint convention, shall have the appointment of the adjutant-general and quartermaster-general; the second adding the following educational provision:

No person shall have the right to vote, or be eligible to office under the Constitution of this State, who shall not be able to read the constitution in the English language and write his name; provided, however, that the provision of this amendment shall not apply to any person prevented by a physical disability from complying with its requisitions, nor to any person who now has the right to vote, nor to any person who shall be sixty years of age or upward at the time this amendment shall take effect.

Other acts of the session were as follow:

Making the first Monday in September, known as Labor Day, a legal holiday.

Requiring all teachers in the public schools to devote not less than ten minutes each week to the instruction of children in the principles of kindness to birds and animals.

Permitting administration to be granted on the estate of intestate persons more than twenty years after their decease.

Requiring instructors in the public schools to be examined in the elements of natural science as applied to agriculture.

Establishing a board of registration in the cities of the State.

Establishing a State board of dental examiners.

Appropriating \$24,500 for a new building and for other improvements at the State Agricultural College.

Appropriating \$65,000 for pensions to invalid soldiers and their dependents during 1891 and 1892.

To punish fraud at agricultural fairs.

Making an assignment of wages invalid against the employer unless he has actual notice of it.

Requiring all loan and building associations to be incorporated.

To protect the rights of minority stock-holders, and to provide a method by which the value of their shares shall be judicially determined, in cases where the majority shall have voted to lease, sell, or consolidate the franchise of the corporation.

Providing that fraternal beneficiary associations may be licensed to do business within the State by the Insurance Commissioner.

Providing that mortgages may be foreclosed by suit in equity, in addition to the other modes prescribed by law.

Revising the game laws.

To provide for the registration of vital statistics.

Giving a right of action for injuries causing death.

The widow, children, or heirs may recover not over \$5,000.

To prohibit discrimination in life or endowment insurance policies.

Education.—The following common-school statistics cover the school year 1889-'90: Children of school age, 211,547; number attending school, 139,676; average daily attendance, 98,364; average school year, twenty-two weeks two days; teachers employed, 7,517; average monthly wages, male teachers, \$34.40; average monthly wages, female teachers, \$17.60; number of towns and plantations having town system, 127; number of school districts, 3,305; number of school-houses, 4,354; built during the year, 62; cost of new buildings, \$176,252; value of school property, \$3,455,965; expenditures for the year, \$1,327,553.

In comparison with the figures for the year preceding, there was a decrease of 517 in the number of children of school age, of 3,437 in the number attending, of 278 in the average daily attendance, and of 32 in the number of teachers. The marked decrease in the number attending school is in part offset by the increase in attendance upon the free high schools, which were maintained during the year in 210 towns and cities. In these schools 15,299 pupils were registered, an increase of 399.

At the three normal schools the average number of pupils during the year was as follows: At Framingham, 120; at Castine, 100; at Gorham, 109. There were 77 pupils in the Madawaska Training School during the year.

Railroads.—On June 30 there were 1,382 miles of railroad in operation in the State. The gross earnings of railroads for the year ending on that day was \$7,012,778.92; the number of passengers carried, 5,502,646; and the number of tons of freight, 10,389,420. There were 51 miles of street railroad in the State.

MANITOBA. About the beginning of the present century Thomas Hamilton-Douglas, the fifth Earl of Selkirk, gave much attention to the subject of emigration, especially from Scotland. He established a colony in Prince Edward Island, of which he had become a grantee, and then conceived the bolder design of planting a colony of Scotch Highlanders and islanders within the territory of the Hudson Bay Company, of which company he is believed to have been an associate. Still, this project was the earl's private venture, in which the company had no part. It was found necessary not only to obtain from the Hudson Bay Company their title to a tract of land for the proposed settlement, but to obtain from the aborigines their title, which they were not yet aware of having conveyed to the King of England, the Hudson Bay Company, or anybody else. So the Indians were made content, at least for the time. There is a tradition that the concession from the Indians to the Earl of Selkirk, or to the Hudson Bay Company, to be transferred to him, was of "as much land as could be seen under a horse's belly." This description is rather vague, but in that level prairie

country it is very comprehensive. It seems to have been held to mean the country all about the point of junction of the Assiniboine with the Red river; and the settlement was to be called Assiniboia, but it became more commonly known as "Lord Selkirk's Settlement." The first arrival of immigrants was in 1813, and was under the direction of Lord Selkirk's agent, Mr. Miles McDonald. These settlers came from the Scottish Highlands by what was then the usual route, *via* Hudson Bay and York Factory, up Hayes and Hill rivers, and by Lake Winnipeg to Red river, a most formidable journey even for Scottish Highlanders. It is said that the first fort was erected at Pembina, on Red river, just south of what is now known as the United States boundary line. It was called "Fort Daer." The name Daer gave the courtesy title to the heir of the Earldom of Selkirk. However this may be, the site eventually fixed upon for the new settlement was on the west side of Red river, about 5 miles below, or northward of, the mouth of the Assiniboine. In 1814 the new settlers amounted to 200. This little colony was the nucleus of the province of Manitoba.

Lord Selkirk, in 1816, caused a fort to be built, and called it Fort Douglas; the name survives in Point Douglas, in the northern part of the present city of Winnipeg. The early histories of all the older colonies on this continent present harrowing pictures of hardship and suffering; but it is doubtful if any of them passed through a more trying ordeal than did the early settlers of Assiniboia. Planted in the very heart of the continent, they saw, in their isolation, that they stood upon a fertile spot; but it might be only an oasis, for aught they knew; for all beyond the horizon of their vision was an unknown wilderness. The Northwest Company, long the fierce rivals of the Hudson Bay Company in the fur trade, regarded the new settlement as being under the protection of the latter, if not really the work of that association, projected in order to obtain a firmer foothold upon the great surrounding territory. As early as 1804 the former company had established a post called Fort Gibraltar, in the immediate vicinity of the spot now occupied by this colony; and they assumed that the settlement was a trespass upon their rights. The Indians, encouraged by this example, treated the newcomers with open hostility. At the same time even the people of the Hudson Bay Company seemed to look with anything but a favorable eye upon the little agricultural colony. Amid the frequent plots and squabbles of the rival companies these unfortunate settlers became objects of suspicion to both. More than once the whole colony, in dread or despair, took flight in a body, and made their way to Pembina, but were induced to return to the place of their earlier abode.

In 1816 the Earl of Selkirk visited this his pet colony, and found it, in a great measure, broken up. The task of setting matters right he found to be most formidable. What with the Indians and the Highlanders and the Hudson Bay people and the Northwesters, he was involved in a perplexing chaos. The French-Indian *Metis*, or *Bois-brûlé*, with others ready for such frays, had been let loose upon the settlement; its mills and many of its houses and barns had been burned,

and the place seemed all but ruined. At length the earl managed to reorganize his little colony, and left it with improved prospects. Then the place was called Kildonan, for a place near Helmsdale, Sutherlandshire, Scotland. In 1817 Lord Selkirk made a settlement of German De

under the name of the "Hudson Bay Company," but there were other sources of misery. The Red river and the Assiniboine were subject to floods in spring, and at times they spread over the whole country, especially around their point of junction. Houses, barns, cattle, sometimes even



CITY HALL, WINNIPEG. (FROM A PHOTOGRAPH BY MRS. B. E. CARR.)

Meuron soldiers on the eastern bank of Red river, in what is now known as St. Boniface.

In 1821 one cause of the misery of the colonists was removed in a great measure through the amalgamation of the two rival fur companies,

human beings, were swept away to Lake Winnipeg. On the Western side of Red river, about 12 miles below the mouth of the Assiniboine, rises from the level of the prairie a singular elevation, which is dignified by the name of "Stony Mount-

ain." Had it not been for this eminence, the history of at least the first settlement on Red river would have been short and tragic. There Nature had provided for the unfortunate people an asylum against the fury of the floods, and there they waited until the subsidence of the waters enabled them to return to their desolated homes and begin anew the struggle of life. With experience, the inhabitants learned to prepare, to some extent, for these floods. The catastrophe was regarded as an annual probability. Owing mainly to engineering provisions connected with railway works, these inundations are not likely to recur.

These Selkirk settlers found themselves afflicted from time to time by a plague of locusts or grasshoppers, which swept northward into the Red river and Assiniboine settlements in immense clouds and devoured every green thing before them. On each of these occasions the agricultural crops were almost entirely consumed, and the people were driven to the verge of starvation. There were years in which actual famine was only averted through charitable aid from abroad.

The Earl of Selkirk died in 1820, and in 1835 all his claims upon the Red river were by his legal representatives transferred to the Hudson Bay Company. The population of the somewhat scattered settlement was then estimated at 5,000. This comprised a motley of Scottish Highlanders and their thoroughbred descendants, French half-breeds (otherwise called *Metis*, or *Bris-brulé*), English half-breeds, and officials of the Hudson Bay Company. The latter class had now come to regard the Selkirk or Fort Garry settlement as the capital of their domains, and the whole colony a dependency of the Hudson Bay Company itself. Fort Garry had been built in 1821, concurrently with the amalgamation of the two fur companies. This, known as "the old Fort," was replaced in 1835 by the more capacious and substantial and not unpicturesque New Fort Garry, on the north bank of the Assiniboine, only a few rods above the point of its junction with the Red river. This, in its turn, was razed, in 1882, to make way for the requirements of a growing city.

About the time that the settlement had completed its fourth decade people in the eastern provinces of British North America began to make inquiries about this great and almost unknown region. Expeditions were sent out by them to spy out the land, and enterprise and curiosity sent many private explorers upon the same track. It was soon made known to all that the Hudson Bay territories comprised industrial resources of enormous value, especially for agriculture and mining—that, in short, within themselves they embraced the elements of an empire. The Dominion of Canada was founded in 1867, and one of the earliest resolves of its government was, that the Hudson Bay Company "must go," or agree to some reasonable arrangement for surrendering the soil of this vast territory. In 1869 the Hudson Bay Company sold out all their territorial right and claim to the British Government, acting for Canada, for the sum of £300,000 and certain land reservations; and Canada paid that money and entered into possession. The population of the whole territory was then esti-

mated at 12,000, but this must have been exclusive of the Indians.

As it now turned out, the French half-breeds had arrived at the conclusion that this large portion of the world was made solely for them; and in this same year (1869) they, under the inspiration and leadership of Louis Riel, raised a rebellion, put forth manifestoes, and indulged in all the demonstrations usual on such occasions. "Riel's second rebellion," in 1885, was a natural sequel of the first. Its main interest was excited by the promptness and spirit with which the Canadians of every province, from Nova Scotia to British Columbia, sprang to meet the occasion, while yet unaware of the magnitude of the defection. (See "Annual Cyclopædia" for 1885, page 124).

Description and Recent Progress.—

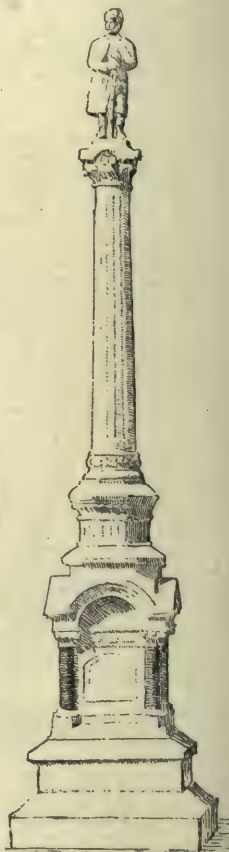
The area of Manitoba, as finally determined, is 123,200 square miles. Its progress in population and industrial pursuits in 1881-'82 were phenomenal. In 1871 the village about Fort Garry contained 241 souls. This number had so far increased

within the two ensuing years that in 1873 it was deemed advisable to have the place incorporated as a city, under the name of Winnipeg. In 1881 the census return gave the population of the young city as 7,985. In the spring of 1882 it was over 25,000, and the railway trains were bringing population into the province at the rate of over 1,000 a day; and to facilitate this movement the Canadian Pacific Railway Company's employes were laying down rails on their now celebrated line at a rate of speed which had no precedent. By the census of 1891 the population of the province amounted to 154,442, and that of Winnipeg to 25,642.

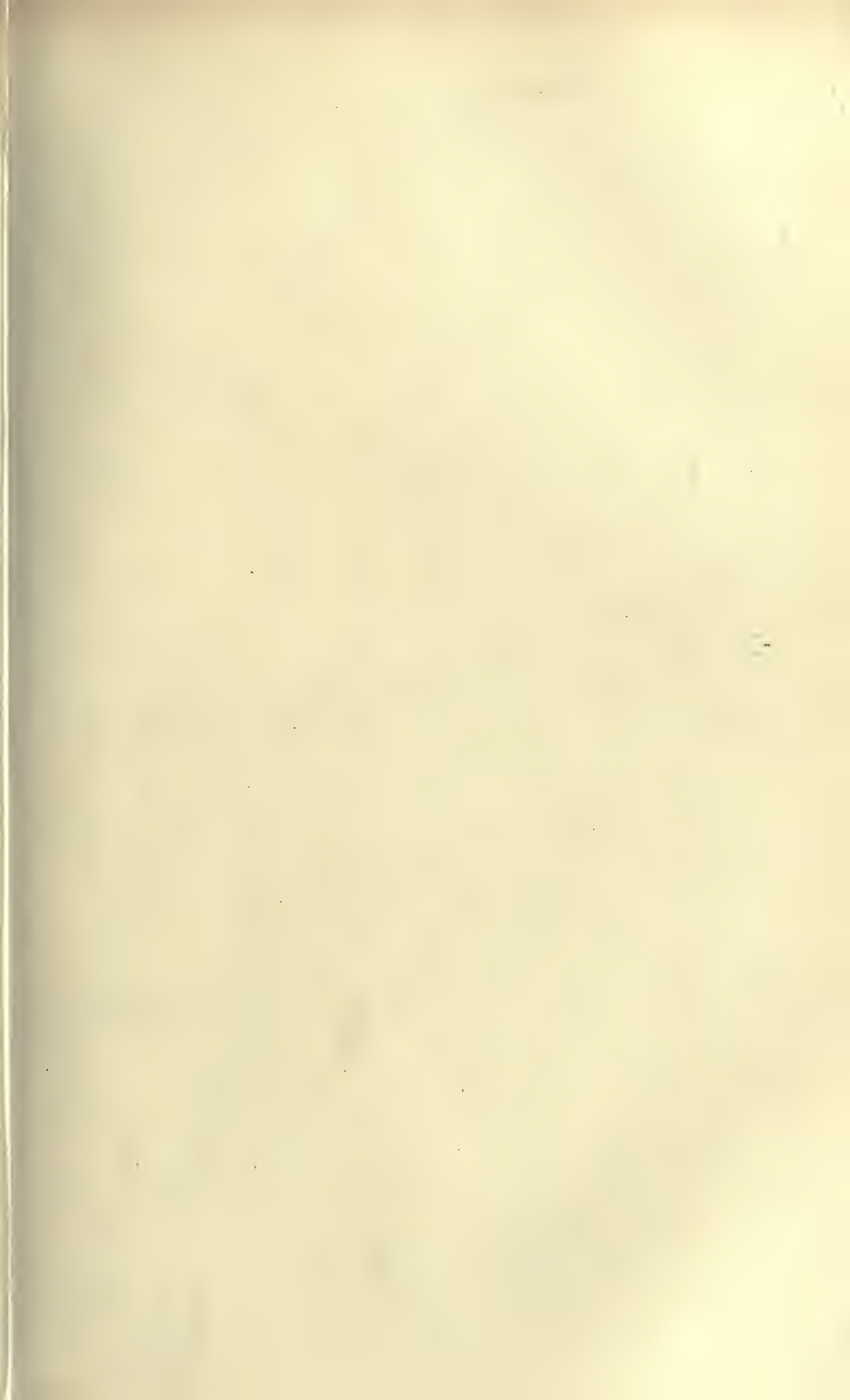
Legislation.—On Feb. 26, 1891, the fourth session of the seventh Legislature of the province was opened at Winnipeg (after the election of Samuel Jacob Jackson, Speaker, *vice* Hon. William Winram, deceased) by His Honor John Christian Schultz, with the following speech:

Mr. Speaker and Gentlemen of the Legislative Assembly:

While I have much pleasure in meeting you on the opening of this the fourth session of the seventh Legis-



MONUMENT IN WINNIPEG TO THE SOLDIERS THAT FELL IN THE RED RIVER REBELLION.







lature of this province, yet I am grieved to miss from among you the Hon. William Winram, who, for the last three years so efficiently discharged the responsible duties of Speaker of the Legislative Assembly of this province. I am sure you will join with me in my heartiest sympathy with his family in their deep affliction, and will, with me, also deplore the loss the province has sustained by the death of this faithful and tried public servant.

I have noticed with much pleasure the increased interest which is being taken in Manitoba as a place for immigration. This, no doubt, is due in a large measure to the export of a large surplus of wheat and other grain from this province during this season, and to the exertions of my Government in making known to the world the advantages of Manitoba as a place for settlement. You will be asked to provide means to enable my Government to adopt still more active measures to bring about the speedy settlement of the large area of land in this province still unoccupied.

In connection with the agricultural development of this province, I observe with much satisfaction that the farmers of the province have very generally taken advantage of the provisions of the act passed at the last session of this Legislature respecting the establishment of farmers' institutes. I have no doubt that these institutes will do a good work in securing a better system of farming.

Such progress has been made by the commission appointed to consolidate the statutes that their report will be submitted at an early date. Before the consolidation can be completed it will be necessary to make a number of amendments to the statutes of this province as at present existing, in order to incorporate them with the consolidated statutes.

I regret exceedingly having to advise you that it will be found necessary to secure further accommodation for the care and treatment of insane patients, in consequence of the increasing number of that unfortunate class of the community. The number of patients admitted to the Home for Incurables since its establishment has almost reached the limit of accommodation. An enlargement of the present building, to meet the increasing necessities, will have to be considered during the present year.

The public accounts for the past fiscal year and the estimates for the current year will shortly be submitted to you, from which you will be pleased to learn that the policy of economy inaugurated by my Government has been strictly adhered to.

I leave you to the consideration of the business that may require your attention, in the fullest confidence that your deliberations will be conducted with the single desire of advancing the best interests of the province.

This speech sufficiently indicates the tenor of legislative proceedings during the session. The total provincial receipts from all sources during the year were \$924,431; the total expenditure, \$1,021,641. A large proportion of the latter is represented by works of permanent public benefit. Manitoba is essentially, and all but exclusively, an agricultural country. The product of cereal crops in 1890 was as follows: Wheat, 746,058 acres, 14,665,769 bushels; oats, 235,534 acres, 9,513,433 bushels; barley, 66,035 acres, 2,069,415 bushels. According to most reliable authorities, coming down to Dec. 10, the crop for 1891 will have been: Of wheat, over 25,000,000 bushels; oats, 14,792,605 bushels; and of barley, 3,197,875 bushels. The average yield of wheat per acre for the latter year was 25.3 bushels, against an average of 21.1 for 1890; the average of oats, 48.3 per acre, against 41.3 in 1890; and the average of barley, 35.6 bushels per acre, against 32 in 1890.

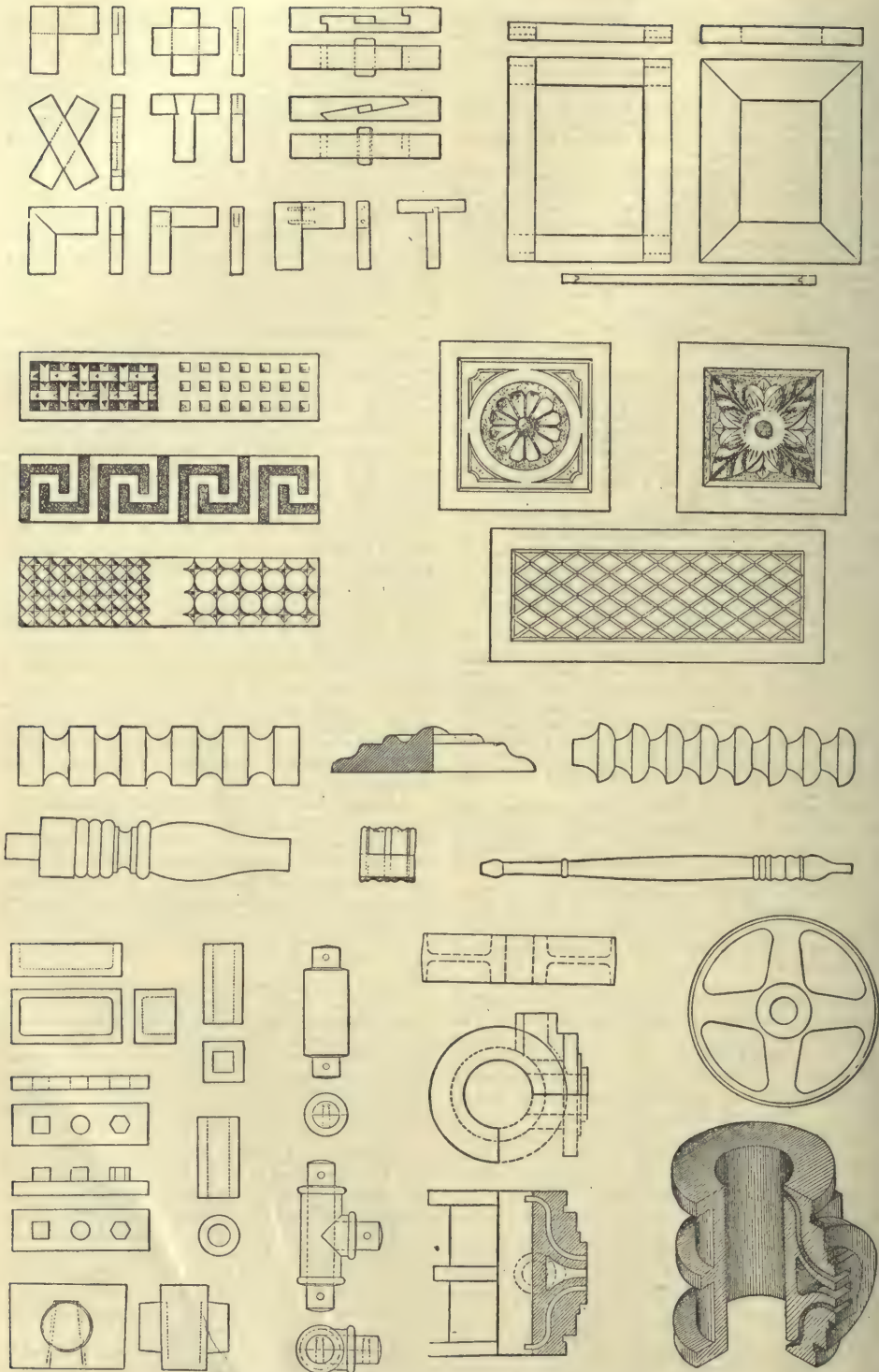
MANUAL TRAINING. The first complete historical sketch of this subject in the United States appears in the "Annual Cyclopædia" for 1887, under the title **EDUCATION, INDUSTRIAL.** Since 1887 much has been done to shape and define it as well as to introduce it into the common-school systems. The studies and exercises were then designated by many names, and the purposes of them were popularly confounded with those of trade schools. "Manual training" is now a technical term, standing for a system of education based upon certain definite principles, and employing a variety of methods. It is no longer an equivalent or alternative term for industrial education, nor for industrial training. Industrial education—education combining scientific and practical technical training of a certain grade—may or may not employ manual training at some stage in its course, but industrial training, as the term was in use a few years ago, is disappearing. "Manual training" (which, after all, is a misnomer) is likely to stand for the system of instruction that aims at quickening the intelligence and faculty of thought, observation, and reasoning by means of exercises not of the hand only, but of the eye as well, and many other members and muscles of the body, but which does not involve the notion of physical exercise, as such, nor mere manual dexterity, nor of developing skill for the production of a material object. This is not the system that is in use in many of the schools and institutions named in this article. In some a combination of this with industrial or technical education is to be found, but it is the system that seems to be the object sought through many and seemingly widely divergent ways for the common schools in many places, and by the seekers after the best secondary education everywhere in the United States.

Alabama.—The Alabama Polytechnic Institute, at Auburn, introduced manual training in 1885, well equipped with buildings and machinery for four departments—wood-working, forging, founding, and machinery. It has a special appropriation from the Legislature. The course is obligatory upon the three lower classes, and requires of each class three exercises a week of three hours each.

First year: carpentry and cabinet making, about five months; turning, about three months. Second year: pattern making, half of the first term; followed by molding and casting, ten weeks; forging for the remainder of the year. Lectures on metallurgy are given during this year. Third year: chipping, filing, and finishing take the first term, and machine work the remainder of the year. Drawing is taught and practiced in connection with the work of the course.

Colorado.—Haish Manual Training School of the University of Denver has taken account of the older schools, such as St. Louis, Chicago, and Toledo, in fitting up its very complete plant and arranging its course. The shops have the latest improved appliances for 128 students. The school year is divided into 3 terms, of sixteen, thirteen, and eleven weeks, respectively, and the course of study and hand training is continued through three years. It is a pay school.

Connecticut.—The State Normal School at New Britain has had manual training for several years, under favorable conditions and with good



PROBLEMS IN JOINERY, CARVING, TURNING, AND PATTERN WORK.

results. The use of carpenter's tools, carving, modeling, and sewing are taught. There is a well-equipped workshop. All students take courses in slöjd, and those who desire it receive special training. All must make for themselves apparatus for illustrating physical science. The children, who begin in the kindergarten, continue in the training of the workshop till they leave the school. There were about 300 children in 1890. They have a molding room, drawing-room, workshop, and gymnasium.

The Normal School at Willimantic has a course which proceeds from and carries forward the kindergarten work, but no slöjd. In all the schools connected with State and city institutions, State Reform School, Storrs' Agricultural School at Mansfield, Industrial School at Middletown, orphan asylums, and homes for the destitute, industrial education is carried on.

New Haven, beginning in 1886 with a permanent special instructor in manual training, has now 10 classes, one for each grammar school, in which 24 boys each have been instructed two hours a week. The pupils are selected by the principals in their discretion. The course is systematic, and extends to a great variety of practice with tools, not with the object of constructing any articles for use, though such articles are often made. Drawing is studied and practiced through the course.

The Greenwich Manual Training School, opened in 1889 in connection with the public schools, has lately had more than 100 pupils, about one third of high-school age, the remainder of grammar-school ages, besides a few adults, working from one to two hours a week.

In Brooklyn and Stamford studies and work have been introduced to a greater or less extent, and in Norwich, where a systematic course is likely to be opened soon.

District of Columbia.—The public schools are provided with progressive studies in manual training, beginning in the kindergarten and leading up to the physical and chemical laboratories of the high school. Boys of the seventh and eighth grammar grades have two hours a week in wood and metal work, similar to that of the St. Louis school. One such laboratory was opened in 1886, with 1 teacher and 150 boys. There are now 13 laboratories, 4 teachers, and 1,600 boys. Girls have cooking and sewing.

Florida.—State and county authorities have taken up the subject of manual training, and already it has been successfully introduced in the normal schools for white and black and in the graded schools at Pensacola and Jacksonville, the latter for colored youth. In the State Normal and Industrial College for colored students at Tallahassee, the professor, F. C. Johnson, is a graduate of the Chicago Manual Training School. The course runs through several years, and much attention is paid to drawing, especially mechanical drawing. In the Agricultural and Mechanical College, at Lake City, the course runs the entire four years, disciplinary and instructive, with drawing all the way. The shops for work in wood and metal are well equipped and supplied with hand tools; the wood shop for forty students. No trades, but the principles underlying all trades and handicraft, are taught, and nothing is made for sale.

Georgia.—In Atlanta University a mechanical course of three years embraces two years of wood working and one of metal working, and, including drawing, requires seven hours and a half a week of all boys above the third grade, in addition to the other studies. A brick building for the department was provided by private subscription, and has been well equipped and supplied with tools. To those who have finished the course and have shown ability and fitness, special instruction in some of the trades is given.

The School of Technology, at Atlanta, established by the Legislature in 1888, for education and training in the industrial and mechanic arts, aims at placing the pupil during the course of training in an environment not unlike what he may find when he enters on the active duties of life. But the object is educational. This is not a trade school, though it teaches the manual dexterity necessary in all trades, with courses in the usual studies, and especially in drawing. The course covers four years, and there are no electives.

The Normal and Industrial College, at Milledgeville was established in 1889. The Legislature appropriated \$35,000 in money, to be paid in three yearly installments, beginning in 1891, and gave for the use of the college valuable property in Milledgeville (22 acres), with a handsome and commodious dwelling and small buildings, and gave \$8,000 for the current expenses of 1891, and has since appropriated \$1,800 toward those of 1892. The city gave \$1,000, and the people of the city lent and advanced \$50,000 to enable the directors to push the erection and equipment of the necessary buildings, so as to open the institution in the fall of 1891 with its full quota of 360 pupils. There are four departments—the normal, the industrial, the collegiate, the domestic—not constituting separate schools. Industrial and free-hand drawing, manual training, cooking, and dress-making are taught.

Illinois.—In the article before referred to is given the history of the beginnings, in 1883, of the Chicago Manual Training School, founded and controlled by the Commercial Club of Chicago. Under the direction of Dr. Henry H. Belfield, the experiment, which graduated its first class (which was in carpentry only) in 1886, soon became a large and thorough-going high school upon the so-called manual-training principles, with all the pupils it could accommodate, and a model for many schools which have been opened or are about to be opened in different parts of the country. The plant has been steadily increased, and in 1890 the building was considerably enlarged. The wood rooms accommodate 160 boys; the foundry and forge rooms, 90 each; and the machine shop, 60. All are completely equipped for each student. Power is supplied by a Corliss engine of 52 horse-power and 2 steel boilers. The drawing rooms, furnished with models and casts, have tables and lockers for 365 boys. This is the course;

JUNIOR YEAR.—*Mathematics:* Algebra, geometry. *Language:* English language and literature, or Latin. *Drawing:* Free-hand, model and object, projection, machine, perspective. *Shop Work:* Carpentry, joinery, wood turning, pattern making, care and use of tools.

MIDDLE YEAR.—*Mathematics*: Geometry and plain trigonometry. *Science*: Physics. *Language*: General history and English literature or Latin. *Drawing*: Orthographic projection and shadows, line and brush shading, isometric projection and shadows, details of machinery, machines from measurement. *Shop Work*: Molding, casting, forging, welding, tempering, soldering, brazing.

SENIOR YEAR.—*Mathematics*: Book-keeping, higher algebra, reviews. *Science*: Chemistry, physical geography. *Language, etc.*: English literature, civil government, political economy, or Latin or French. *Drawing*: Machines from measurement, buildings from measurement, architectural perspective. *Machine Shop Work*: Chipping, filing, fitting, turning, drilling, planing, etc., study of machinery, management and care of steam engines and boilers. Instruction is given upon the production, properties, and uses of the materials used in each year. Throughout the course one hour a day is given to drawing and two hours to shop work; the remainder of each school day is devoted to study and recitation.

Education, not manufacture, is the controlling principle, and, notwithstanding the prominence given to manual work, experience shows that

experiment was begun in 1886 by a manual training annex to the high schools, and was made an independent school in 1890.

The Cook County Normal School, in order to follow out the principles of the kindergarten in all the public-school grades, has a course in manual training for which there is a room fitted up with the latest appliances, and which is closely related to and supplemented by free-hand and industrial drawing. "It is the purpose of the school," says Prof. Francis W. Parker principal since 1883, "to bring the members face to face with the duties and responsibilities of their prospective profession. Manual training will become a factor in our common schools just so fast as skillful teachers are trained who can do the work."

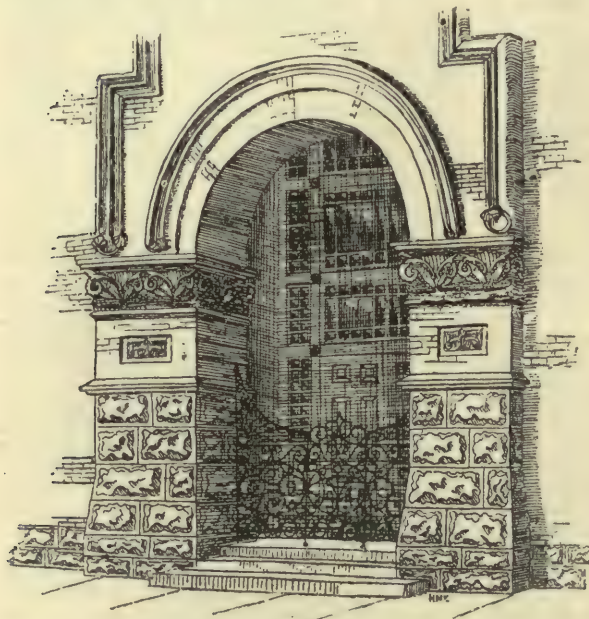
Peru introduced manual training into the public school ten years ago, has lost nothing of interest and usefulness, and there is now a settled content with it as a part of the public-school system. Moline and Beardstown public schools have manual training of some sort.

Iowa.—In the Davenport public schools the initial step to manual training was taken some years ago by the introduction of industrial drawing. In the lower grades this was supplemented by stick laying and paper folding. In 1888 a well-fitted cooking school was opened for girls of the high school and ninth grade grammar. The course was of forty lessons. It was popular, and seemed to exert a good effect upon the interest in other work. In 1890 another large room was furnished for training boys in the use of joiner's tools. Only boys of fourteen years are admitted. Attendance is optional, but once begun must be continued, except for good reason shown. Two and a half hours a week is the usual instruction, and the pupils must keep up with their regular studies. This they cheerfully do, while showing great interest in the manual work.

The directors of the Independent School District of West Des Moines, in 1889, appointed a committee to investigate the subject. The committee visited the manual training schools of St Paul, Minneapolis, Chicago, and Toledo, and reported in favor of the adoption of the system in the schools of the West City.

A room was at once fitted up for shop work, and later another for domestic economy. Two special teachers were engaged at the outset. The course is to some extent a combination of manual training with industrial and technical education. It is carried through four years, and there is drawing, free-hand and mechanical, all through. The pupils have begun with kindergarten in the primary schools.

The boys have, first year, hand work in wood and care and use of tools; second year, machine work; third year, hand work in metals, casting, soldering, and brazing; fourth year, machine work in metals, study of steam engine and boilers. Girls have, first year,



ENTRANCE OF CHICAGO MANUAL TRAINING SCHOOL.
(FROM A PUPIL'S FREE-HAND SKETCH.)

the other branches need not fall behind those of the best high schools. On the recommendation of the director, graduates of this school are admitted without examination to many of the leading polytechnic and engineering institutes of this and other States. In September, 1890, 155 juniors were admitted, and in 1891, 130. It is a pay school.

The Chicago English High and Manual Training School was opened by the Board of Education in the fall of 1891, with large workshops and an academic department, having about the same studies as the other high schools. The course is optional, and over 260 boys are enrolled. The



FORGE-SHOP, BALTIMORE SCHOOL.

light hand work in wood, care and use of tools; second year, wood carving and clay modeling; third year, plain sewing, drawing and cutting of garments from measure, fitting and making garments; fourth year, chemistry of combustion and of cooking, selection, care, and use of cooking apparatus and utensils, selection and preparation of articles for food, cooking, including bread making and preparing food for the sick.

Oskaloosa has had drawing, sewing, and cooking for several years.

Kentucky.—Louisville is to have a manual training high school as soon as the building can be erected, when an extended course of study will be arranged. At present 96 boys of the freshman class of the regular high school receive instruction in the use of wood-working tools forty-five minutes each day, and in drawing one hour a week, all the time that can be spared as the course of study is now arranged.

Louisiana.—In Tulane University, New Orleans, a manual training school is a distinct department, but the laboratory and workshop, in charge of the Director of Manual Training, is administered in connection with two other departments—the high school and the college. Shop work, drawing, and some experimental work are carried on. There are a carpenter's shop, forge shop, and machine room, well-fitted and supplied with machinery and tools. The manual training course in the high school comprises the second and third years, and is purely educational, with drawing as an important part throughout, five hours a week. In the college course, manual training is given in the freshman and sophomore years, five hours a week in addition to a like number of hours in drawing. In the junior and senior years engineering and other technical work is taken up.

Maryland.—The Baltimore Manual Training School has been increasing in every way upon the lines taken up at first and fully described in this "Annual" for 1887. The curriculum has not materially been altered. A post-graduate course was opened in 1888. Sixteen instructors are now employed. The school year 1890 began with 506 pupils, of whom 9 were special stu-

dents, and of these, 6 were from Johns Hopkins University. During the year 249 were admitted, 310 withdrew. There were 17 graduates in 1890. During that year a large new building was completed and the old one altered to correspond. The school is now handsomely housed and admirably equipped. It was the first manual training school in the United States established as part of the public school, and it is still the largest among similar schools.

Massachusetts.—The Legislature in 1889 requested the Board of Education to investigate and report upon the subject of manual training, and, among other things, upon what additional legislation, if any, was necessary in order to provide such instruction in the schools of the Commonwealth. An act of 1884 requires industrial drawing to be taught in all the public schools, and permits every town and requires every city and town of more than 10,000 inhabitants to give free instruction in industrial drawing to persons over fifteen years of age. Another act of the same year authorizes the purchase of hand tools at the expense of the town. The Board of Education in 1890 made to the Legislature a report admirable for its brevity and its fullness. Industrial drawing is taught in 201 of the 351 cities and towns in the State; models and objects are used in connection with the drawing in 119 of them, while in 43 special teachers are employed. Nearly 80 per cent. of the school population received instruction in industrial drawing in 1889. The State Normal Art School has over 200 pupils. The Board of Education employs an agent whose whole time is given to aiding the school authorities to introduce and teach industrial drawing.

In the Boston public schools the experiments described in the article of 1887 have been carried on in about the same manner, sewing in regular course for girls, industrial drawing for all; and outside the course, in small classes at a time, instruction to girls of certain grades in cooking and boys in carpentry. As a result of this long experience, manual training is to be made a part of the school system. A compre-

hensive plan has been adopted for the entire city, and will be gradually worked out. The generous support of Mrs. Shaw and Mrs. Hemmenway, who have maintained the outside schools, is not to be withdrawn all at once, nor their plan dispensed with. The City Council has appropriated \$100,000 for a mechanic arts high school, and the course of study in the elementary schools is to be shaped with reference to it, so that boys who are to follow industrial pursuits shall be trained in the best way to profit by this new opportunity. The course laid out begins in the kindergarten. It has been found that a child who has had a year in the kindergarten has had his perceptive faculties so quickened that he has a year's start of the child who enters first into the primary school. The rudiments of manual training are taken up in the primary schools with stick laying, paper cutting, clay modeling, etc. In the grammar-schools a distinction between the boys and girls is introduced. Girls have sewing and cooking, these being accepted after several years' experience as indisputably of educational and practical value—educational in matter of neatness, order, and value of time, and practical in many instances which are interesting and forcibly instructive. The committee recommends that every girl be taught plain sewing, and in the upper classes pattern making and cutting, and cooking and so much of chemistry as enters into it. There are now 8 cooking schools, 3 more are nearly ready, and 4 more on the way—in all 15, so distributed about the city as to be convenient to groups of the other schools. A principal of cooking schools will have oversight and authority upon all, and the teachers must not only be familiar with the art they teach, but must illustrate in person the most perfect habits of neatness, and convey their instruction in well-chosen language. All the boys of every class, and all classes of the same grade throughout the city, are to have exercises in wood work (the starting-point is drawing, not models), and the work beginning in the fourth class. Below this—that is, in the fifth and sixth classes—they practice construction in card-board. Two plans of a four years' course have been arranged on the same principles, each complete in itself, differing in certain practical features. They are being thoroughly tested, one in one school, the other in another, and it is the intention to reduce the two to one harmonious system. What classes to instruct first, upon the introduction of the system and how many at a time, are problems that have been submitted to long experiment and much discussion. It has been determined that to begin with boys of the second grade is best, and that a single teacher can instruct about 280 pupils a week in ten classes of 28 each. There are about 2,000 boys in the second grade. Eight teachers and 14 shops are required. The next grade to be taken in upon the introduction of the plan is the fourth; and in this there are about 3,000. In one of the grammar schools the pupils in the lower grades are drawing simple geometric forms, which are then cut out of white wood by the use of a knife only, with commendable results. This work is not in any way a substitute for intellectual

studies. The change wrought in some of the boys is most wonderful. To be deprived of their tools is the severest punishment that boys hitherto most unruly can now incur, and it has been found that as much is done in the regular studies as when the whole time was given to them. The wood working has helped to retain boys longer in school. Formerly they were almost universally taken out to be put to work as soon as the law would permit.

PLAN No. 1.—The first year is arranged with special reference to the drawing, light tool work only being introduced. By using only very thin wood, the third dimension in both drawing and tool work is practically eliminated. A board placed upon the regular desks is used, the drawing is made upon the wood, and the piece thus drawn is afterward cut out with a bracket saw, small plane, and file. The drawing and the tool work are thus brought intimately together in the mind of the pupil, and he is taught at the same time the necessity of using care and accuracy in his drawing. The instruction is given by the teacher to the whole class from a model at the blackboard. The pupil thus begins at the same time to make an accurate drawing of a piece, and the piece from a drawing. The first lesson begins with the cube, and teaches parallel, horizontal, and vertical lines, and proceeds step by step till at the end of the year, out of these pieces thus formed, which may be called the alphabet, are made the needle-book, fish-line winder, a pin-cushion, sled, corner bracket, silk winder, pencil sharpener, calendar, easel, inkstand, and box for paper and envelopes.

The object of the second year's work is threefold: (1) to continue the combined drawing and tool work; (2) To introduce the third dimension, with its necessary additional views; and (3) to provide tool work which shall serve as a preliminary training to the joining course. The drawing consists of some new geometrical views, and introduces top, front, and side views. These views are drawn on thin stock as during the first year, are worked out and then used as patterns by which the real piece (in thicker wood) is marked out.

The third year introduces the more practical methods of working in both the drawing and tool work. The two are here separated for a time, the pupil making on paper correct working drawings of various models illustrating various principles, putting on all dimensions, and showing all facts of form needed by the workman for the construction of the piece, and in the tool work making models in wood, working from correct working drawings, and using for marking out the work the rule, square, gauge, and bevel, instead of the elementary principles of the second year. They are at length brought together again, the pupil making in the school-room the working drawings of the models he is afterward to make in the shop. The work done during the third year consists of: Exercise for rule, square, gauge, and bevel, sawing, planing, boring, jointing and doweling, mortising (two joints), chiseling exercise, towel rack, exercise in dovetailing (plain), book rack, and knife box.

The work of the fourth year is a review and continuation of the third year.

PLAN No. 2.—For the fourth class a series of models preparatory to the regular slöjd series has been arranged. The drawing, which should always be preliminary to the work, takes in only one view. A block of paper and the try-square, rule, and lead pencil used in the bench work are sufficient for the drawing in this course. No surface planing is required, and the pupil has thus only to grasp two dimensions. This series consists of fifteen models.

For the three upper classes the regular slöjd series has been arranged. This course is based upon the exercises developed at Näås, Sweden—that is to say, the exercises have the same progressive order, though

represented by different models. But as the models themselves are of minor importance and only an expression of the exercises, the two series are essentially alike. This "American series," as it has been called, has at present thirty-one models, ranging from a wedge to a small cabinet. Like the preparatory course for the fourth class, this is even more closely connected with mechanical drawing, using drawing-board, T-square, and triangles. The pupil must make his own working drawings.

Brookline has instruction in sewing for girls of the first, second, and third grades of all the grammar schools, arranged on a systematic plan, and in charge of a special teacher. All kinds of plain sewing are taught, and cutting and fitting in the last year. Cooking is compulsory in the Lincoln School to the girls of the 4 upper grades; the classes have two hours a week. In the Center School it is given to those who desire it in the 3 lower grades. It is taught in a vacation school, kept at the expense of the town, during July and August, for girls over twelve years of age. A vacation school for boys of the same age offers lessons in carpentry of a more practical sort than that taught in the regular school classes.

Cambridge has sewing in the 3 lowest grammar grades. There are manual training classes connected with the English High School. The Cambridge Training School for boys was founded by Frederick H. Rindge, and is under the immediate control of a committee appointed by him to carry into execution his plans. Pupils in the Manual Training School will recite two hours a day in the English High School, and will work three hours a day in the shops—one hour in drawing, and two hours at the bench. It is intended through this course to make it possible for boys of more than ordinary capacity, application, and fidelity, whose circumstances make it important to give the minimum time to preparation, to enter the Massachusetts Institute of Technology at the end of three years.

Canton has cooking classes provided by private subscription and taught in regular school hours. The attendance is voluntary, and 90 per cent. of the girls have joined.

Dedham has sewing as a part of the regular grammar-school course, cooking for girls in evening schools, and during the summer months a successful vacation school for slöjd work, with four classes of boys.

Easton, in the primary and grammar schools, has plain sewing for all girls, and some instruction in cooking. One lesson a week in carpentry is given to boys of the two upper grammar grades and the lowest grades of the high school. Attendance is voluntary. Expenses are paid from the income of the Oakes Ames fund.

Fall River provides a special elective course in the high school, called the industrial course, including two-hour lessons, and from six to ten a week in wood and metal work, during the four years. Rooms in the high-school building are well fitted up with benches, lathes, forges, and all other necessary means for carrying on the work. The superintendent of the shop says the objects of his lessons are purely educational. There are 55 pupils in these classes. The expenses of the course are paid from the Durfee fund of \$50,000. Sewing is taught only in the evening schools of the city.

Hyde Park schools have sewing for all girls in grammar schools.

Lawrence provides sewing for girls during fourth and fifth years.

Malden has sewing in five grammar schools.

Milton and New Bedford for all girls in grammar-schools. Newton for all girls from fourth to seventh grades, inclusive.

Quincy pupils are encouraged to make at their homes articles of paper, pasteboard, wood, etc.; and in some schools, taught by graduates of the Bridgewater Normal School, the pupils are taught to make simple apparatus for illustrating topics in chemistry.

Somerville has sewing for girls in fourth to ninth grades.

Springfield has a systematic and thorough course in manual training. Sewing to girls of the first four grammar grades, by a special teacher. Wood work is optional, and confined largely to the ninth grade grammar and the high school. About 240 are in the training classes. Weekly lessons, covering one year, for the ninth grammar, and daily lessons, covering three years, for the high school.

Stoneham schools have modeling in clay and paper cutting.

Waltham provides sewing for all girls from third to ninth grades, and manual training exercises each day for boys in seventh, eighth, and ninth grades.

Watertown has sewing in the grammar schools twice a week by a special teacher.

Wellesley has sewing for all girls in the grammar schools.

Winchester has sewing for girls of fourth and fifth years, and optional classes in cooking out of school hours. Carpentry is taught boys in the eighth and ninth classes.

The reform schools and schools for the defective, all, or nearly all, have incorporated manual training into their school exercises. The Board of Education reports that the new element of education is gradually working its way into the schools, and is of opinion that no further legislation is necessary.

Minnesota.—In 1887 a room in the St. Paul High-school building was fitted up for optional courses in wood working and to accommodate 40 pupils. More than twice that number applied to enter; the accommodations were enlarged, and at length opened to 96 pupils, in 8 classes, 5 of boys and 3 of girls—boys, three hours a week; girls, an hour and a half. In the following year a much larger appropriation was made, and an addition to the building was put up containing rooms and apparatus for metal working. The city now has a fine manual-training school house. The privileges of the course are extended to all students of both sexes of the seventh grade, and on through the high school, comprising 6 terms of prescribed work in which drawing—and for girls domestic economy—are included. It is entirely optional, but the pupil having once entered a class must continue in it.

In Minneapolis the system has been in successful operation since 1887. The beginning was made in the Central High School, with benches and tools for 34 pupils at a time, or 120 in all, during each morning session of four

hours, allowing the pupils eighty minutes each. In the same year similar provision was made, and courses were begun on smaller scales in 2 branch high schools. In 1889 another school was opened, and systematic courses of instruction are now carried on in 4 high schools. The equipment in all is the same, though the Central still accommodates the largest numbers. The superintendent says that, in his opinion, a danger in the way toward accomplishing the most valuable results lies in allowing the pupils too early to construct things, and that too much attention can not be given to the first elementary movements and operations.

Stillwater has daily exercises in drawing, has shop work in the high school, and, by way of a beginning, devotes the Friday afternoon sessions generally to exercises in manual training.

Missouri.—The Manual Training School of Washington University, St. Louis, opened in 1880, was the earliest, and is now, perhaps, the foremost in the country. The enrollment has increased from 226 in 1886-'87 to 289 in 1890-'91. This last number is exceeded only by the Chicago school. The results of the class exercises in drawing and tool work have been exhibited for the sake of influence upon educational methods at the annual meetings of the National Education Association at Saratoga, N. Y., in 1882 and 1883; at Madison, Wis., in 1884; at St. Paul, Minn., in 1890. Partial exhibits have been made in Springfield, Fitchburg, and Worcester, Mass.; in New York city and Albany, N. Y.; in Columbus and Cincinnati, Ohio; in Louisville, Ky.; in De Funiak Springs, Fla.; and in Kansas City, Mo. A large selection was sent to the International Exposition at Paris, 1889, and the school was awarded a gold medal. To meet the pressing demands for increased accommodations a new building is to be put up adjoining the present one, and the plant enlarged to a capacity for 500 students. Then 200 boys may be admitted every year, and about 120 will be graduated. The curriculum, covering three years, as described in the "Annual Cyclopædia" for 1887, will not be changed. The average age at graduation is eighteen. Eight classes have passed through the school, and many of the graduates are directors or teachers of the newer manual training schools and of supplementary classes to public and private schools which have been established in many different States. Prof. C. M. Woodward, the director since the beginning, says, in reference to the eleven years' work of the school, that he "is gratified by the thought that, in spite of its many shortcomings, the school has demonstrated the feasibility of incorporating the elements of intellectual and manual training in such a way that each is a gainer thereby"; and that he has "correctly read the public demand for an education which shall insure the most valuable mental discipline at the same time that it gives preparation for the various duties of active life." It is a pay school.

Nebraska.—The Omaha High School opened a manual training department in 1885, which has successfully maintained optional courses to boys and girls in carpentry, wood turning and carving, and in mechanical drawing: two hours a day during the first two years of the high school course.

New Hampshire.—A beginning has been made in Concord with carpentry in the grammar schools.

New Jersey.—The law of 1887 provides for State aid in introducing manual training, equal to the amount appropriated by any city or district, not less than \$500 and not more than \$5,000.

At Montclair the small and careful beginning made in the middle grammar grades in 1882 has prospered. In his report for 1891, Superintendent Spaulding says that, after eight years of experience, it is his conviction that the value of the school course is greatly enhanced by the manual training. A systematic, continuous course is now established in the schools of this city, beginning with the kindergarten of the first year in the primaries.

First year there are four lessons and a little drawing and clay modeling, which are continued during the second year, when usually the regular primary studies are taken up. Until the sixth year all the manual work is in the regular class-rooms. In the sixth year, the first "grammar" year, the pupils come under a special teacher of clay modeling two hours a week. In the seventh year girls are drilled for an hour at a time in overcasting, hemming, and running. Boys are instructed like hours in the week in the use of joiner's tools in the carpenter's shop. Eighth-year girls have two hours a week of instruction in domestic economy and cooking, and boys like hours in wood carving. Ninth-year girls have first cooking, and afterward, about two thirds of the year, wood carving, two hours a week. Boys like hours at wood turning and metal work throughout the year. In the seventh, eighth, and ninth years all have one hour a week in drawing under a special teacher.

The Orange Common Council in 1888 voted \$1,000 for the addition of manual training to the public-school studies, and a like sum was received from the State. At the opening of the fall term practice was begun upon a course which, as accommodations were completed, comprised paper work, clay modeling, sewing, drawing, and the elements of carpentry, and, for girls of the high school, cooking. Two special teachers were engaged and one of the drawing teachers assisted. It was an interesting and successful movement from the first. The carpentry room is commodious, and provided with benches, tools, and lockers, all of the most approved sort; and it is to be enlarged and fitted up for the addition of wood turning. The cooking school, opened in 1889, is well arranged and equipped. The sources, the essential qualities, and the means of preparing good and wholesome food, may here be thoroughly studied, but the preparation of dishes or composition of *menus* is not aimed at. In general, throughout the manual training courses, instruction is given twice a week for an hour at a time.

Elizabeth schools had taught industrial drawing for several years, when, in 1888, manual training was introduced. In 1890 the course was dropped. In 1891 it was resumed in part.

Vineland school trustees in 1876, by almost unanimous vote, directed that plans be prepared for the engrafting of industrial education upon the public-school system of the town. The plans were a long time in hand, and the expense of the outfit for manual training was a serious obstacle. After the law of 1887 was passed the

citizens voted \$500, and so secured a like sum. An instructor was engaged, who began in the summer a training school for the teachers, and with the school year the system went into operation. In 1888 the people again voted \$500, and a second summer training school established the course in a thorough-going way. Two lessons of about an hour are given each week, and all pupils are instructed in drawing. The good results are seen in all the other school work.

The Paterson High School has some similar instruction.

New York.—The Normal School at New Paltz reports that "two full sets of carpenters' tools have been placed in the room set apart for manual training, and the room itself enlarged and conveniently fitted up for work." But the normal-school circular of the State Superintendent does not show that this subject has any part in the curriculum of the normal schools, and in only two of the 120 or more reports for 1890 of the county and district commissioners and city and village superintendents is any mention made of manual training.

In Plattsburg, "drawing, form study, clay and sand modeling, stick laying, paper cutting, and pasting have been successfully pursued during the past year," and "there is a growing demand for an extension of manual training to tool work, sewing, cooking, etc. The problem how to meet the demand has not yet been solved."

The Albany High School has many classes in carpentry and industrial drawing.

Jamestown public schools have sewing and knitting in the primaries, and the privileges of the workshop, sewing room, and printing office are open to as many pupils as can be accommodated. The pupils are selected according to their fitness for this extra work.

In Lansingburg there are classes in clay modeling, with special teachers. Mount Vernon, Newburgh, and Olean have classes in carpentry.

In the Brooklyn public schools a few teachers have tried to start a movement toward the introduction of manual training by such experiments as they could make at their own expense and without interfering with the regular school work, and in some instances these experiments have met with success.

The Pratt Institute, founded in 1887 and richly endowed by the late Charles Pratt, is a comprehensive industrial school, in which special attention is given to manual training, beginning with the kindergarten. There is a technical high-school department, an art department, one of dramatic science, one of commerce, one of mechanic arts, and one of music, and a kindergarten for students of various ages and differing requirements and purposes. Tuition in all is low, in some classes merely nominal. The building and equipment are already extensive and complete, and are to be enlarged and increased. The arrangement and equipment, to which the founder gave so much thought and time, are elaborate. The halls, libraries, recitation rooms, laboratories, and work rooms are fully supplied with apparatus. The technical high school affords an academic course arranged on a manual-training system. Book work is the same for boys and girls, but the manual work differs from the beginning, excepting in some of the

drawing. Boys' work is under the direction of the department of mechanic arts, girls' work under domestic economy. The course is three years.

FIRST YEAR.—English language, rhetoric, algebra, geometry, physiology, physical geography, vocal music, elocution, supplementary reading. *Drawing for Boys and Girls:* Free-hand and instrumental working drawings; free-hand, model, and cast drawing; clay modeling. *For Girls:* Special work in drawing and design, in preparation for wood carving, millinery, and dress making. *Manual Work for Boys:* Bench work—use of tools, joinery, construction; wood turning—straight, shoulder, and molded; center turning—chucking; inside turning—spinning simple bowls and cups; pattern making—principles of molding; draft halving, core boxes, building up. *Manual Work for Girls:* The various stitches and principles of hand sewing, making apron, talks on materials used, machine stitching, and beginnings in cutting and dress-making; hygiene, first and second courses—methods of treatment in sudden illness and accidents and care of the sick.

SECOND YEAR.—General history and English history, or Latin, essay writing, geometry, trigonometry, book keeping, physics, with laboratory practice, elocution, vocal music, supplementary reading, physical culture. *Drawing:* Perspective, architectural, elements of design; and, *for boys, mechanical, for girls, pen-and-ink sketching.* *Manual Work for Boys:* Two-part molding, core making, three-part molding, swept-up work, ornamental pieces in bronze; in forging—management of fire, drawing, upsetting, forming, welding, making steel tools, soldering, sheet-tin work, brazing. *Manual Work for Girls:* Wood carving, cutting and making dresses, talks on choice of materials, color, and form.

THIRD YEAR.—English literature, civil government, political science, French or Latin, essay writing, principles of construction in physics, chemistry and metallurgy, with laboratory practice, vocal music, elocution, supplementary reading, physical culture. *Drawing for Boys:* Advanced mechanical drawing; problems in construction. *Drawing for Girls:* Optional work in the art department. *Manual Work for Boys:* Bench work—chipping, filing, fitting, use of taps and dies; machine-tool work—theory of cutting tools, turning, boring, screw-cutting; general tool work—construction. *Manual Work for Girls:* Millinery, selection of materials, lessons on form and color, to trimming and making hats, bonnets, and toques; cooking, making fire, care of utensils, the chemical and nutritive properties of foods, preparation and cooking of dishes, table serving, and marketing; dress making—cutting and making dress from original design; household economy—the application of scientific methods to practical housekeeping.

The high-school course leads to the advanced work of the high school, with its architectural and mechanical drawing, applied design, wood carving, and art-needlework courses, and to the advanced work of the mechanic art school, with its trade school and school of applied science and technology. There were 3,232 pupils in the fall and winter of 1891.

In the latter part of 1886 the movement for the adoption or trial of manual training for the public schools of New York city took shape when the Board of Education referred the general subject to their Committee on the Course of Study. The committee's report, presented in June, 1887, set forth the origin and development of the subject-matter as a school study and the history of its adaptation and use in this country, and recommended the introduction of "what is generally known as manual training" into the city schools, or at first some of them, and pre-

sented the outlines of a proposed course. The report was adopted, and in October of the same year the matter was re-referred to the same committee, with power to frame a course of study, and to introduce such course into not more than twelve grammar schools and the primary departments connected with them, and to employ special teachers of manual-training subjects. A complete new course of study, including manual training, was arranged and a new manual prepared. This course of study is so ordered that all the branches of education are interwoven together, and all the instruction and study and exercises of the schools are affected or influenced by the manual-training features or idea. It is so complete and elaborate that the mere outline is too long to be inserted in this article. This teachers' manual entirely supersedes the regular one in the schools in which it is used. With the new year the experiment was begun in a few selected schools. During 1888 the course was placed in four boys' and five girls' grammar schools and the eleven primaries connected with them. This put more than 10,000 children under the new training. In 1889 it was extended into 12 more grammar schools and their primaries. It was then in 32 schools—nearly 18,000 pupils. The results were so good that many of the features were embodied in the regular course for the entire city, which was revised that year and went into effect in the next, 1890. The free-hand and mechanical drawing were made the same in the two courses, except so far as directly connected with the shop work of the manual-training course. By the end of 1890 there were five more schools and their primaries, another thousand and a half of children, under the manual-training course. By the end of 1891, 20,670 pupils have the free-hand drawing, more than a third of these have mechanical drawing, which is in all of the grammar grades; cutting from drawn work in the highest primary and lowest grammar grades is taken by somewhat less than 6,000, and about the same number, all the girls in the three higher primary and five lower grammar grades, have sewing; while clay modeling, in the highest primary and all grammar grades but the highest, is taken by about 9,000; clay and paper are used in form study, the former by all pupils in the five lowest primary; shop work in wood in the five higher grammar grades is taken by about 1,800 boys; cooking in the second and third grammar by a still smaller proportion of girls. The course runs through fourteen terms, seven years. All pupils are required to study all the subjects taught in their respective classes, but a pupil who does not wish to take the manual-training course can go to one of the other schools, of which there are, schools and departments, about 190 within the limits of New York city.

The College of the City of New York maintains the courses of manual training established many years ago, and described in the article of 1887. The Workingman's School, founded by Felix Adler, in 1879; the pioneer and model school of this class, still has a kindergarten, with a normal class, and develops work and studies on the same principles, through three primary and five grammar classes; in all a course of eleven years. There are now between 300 and 400 pupils. Since 1890 the custom of receiving only the

children of very poor and working people has been broken in upon; a limited number have been admitted at the charge of \$100 a year or less, half the seats at least are still reserved for the free pupils. So far, pay pupils and free pupils associate freely and influence each other beneficially. The plan works well. The superintendent in his last report says they have pupils who seem singularly incapable of composition, or even the lesser grace of orthography, some of whom have been in the school from the kindergarten up, and have received the same careful treatment as the others; they lag behind in language, which is their weak point, and they would have been regarded as dunces in other schools. But some of them do admirable work in other branches. In the case of these children, proficiency in manual and art work, and in natural history usually go together. After they have developed their peculiar bent, and are encouraged by their success in the manual branches, they gradually gain a better control of tongue and pen.

The College for the Training of Teachers, into which has been merged the Industrial Education Association, described in the article of 1887, and which received a charter from the regents of the University of the State in 1889, has an elaborate department for the instruction of teachers in all branches pertaining to manual training. The various publications, the lectures on this subject, and the furnishing of teachers of manual training are continued by the college. Special attention is given to form study and drawing, domestic economy, mechanical drawing, and wood working. There are Saturday classes for the convenience of teachers actually engaged in teaching in New York and vicinity. There is a model school of four grades—kindergarten, primary, grammar, and high.

The college has an endowment fund. Tuition fees are moderate, and there are several scholarships.

Ohio.—The Legislature in 1886 authorized the levying of a tax for manual and domestic school purposes.

The trustees of the State University at Columbus are erecting a building for a manual-training school.

In Toledo the Manual Training School, established under an ordinance of the Common Council in 1884, is maintained under the joint control of the Board of Education and the directors of Toledo University, as described in the former article. Instruction in the workshops and in free-hand and mechanical drawing is furnished by the University Board, while the intellectual studies are pursued in the public schools at the expense of the City Board. The effect of this united action is to enlarge the scope of public instruction so as to include instruction in some of the practical arts. The course including this instruction is known as the manual training course. Graduates of it are occupying such places as superintendents of manufactures, as architects, designers, draughtsmen, and teachers; but they were taught no trades. In connection with ordinary school studies they were taught the elements of industrial drawing, and the skillful handling of tools that are at the foundation of all arts. The work in manual training causes

no interruption or diminution of work in other departments; and the school becomes more useful and popular from year to year. The course, which has been somewhat altered since 1887, still covers four years, and the lessons occupy from two and a half hours to seven hours a week. There are drawing classes all through the course; sewing, wood shops, blacksmith shop, and machine shop. The four-story building, which forms a wing of the high-school group, is specially constructed and fitted for the purpose.

The Cleveland Manual Training School was incorporated in 1885, opened in the following year, and upon the act of the Legislature, laying a tax for such education, the owners gave to the city Board of Education the use of the building and equipment for free classes to pupils of the public schools of the high-school grade, and at least fourteen years of age. Other than the

unusual skill in any particular line of work. Boys not younger than fourteen years and of high-school grade or acquirements are admitted, and without examination, on proper certificates. It is a pay school.

Pennsylvania.—In 1887 the Legislature provided for the appointment of a commission to make inquiry and report on the subject of industrial education, looking toward the best means of promoting it, and how far it is possible or desirable to incorporate it into the existing system of public instruction. The chairman of the commission, George W. Atherton, LL. D., President of the Pennsylvania State College, visited institutions in Europe, and the other members visited the schools of the State and elsewhere, and collected a vast amount of information, a small part of which was submitted to the Legislature with their report in



WOOD-WORKING SHOP, MANUAL TRAINING SCHOOL, WESTCHESTER, PA.

public-school pupils pay a small fee. The work, extending through three years, is in the use of tools, and mechanical and free-hand drawing. Nine hours a week are required, and one third of the time is given to drawing. The ground covered is much the same as in the course for boys in Toledo.

The Cincinnati Technical School, which is in fact a manual training school, was incorporated by the Order of Cincinnati. It was opened in 1886. In the following year the Commercial Club as a body took an interest in the project, and it has since borne nearly half the expenses of the school. The object of the school is to furnish instruction and practice in the use of tools, in mechanical and free-hand drawing, in mathematics, the English language, and the natural and physical sciences. The facility of making plans and the ability to execute them are sought for, rather than manual dexterity or

1889. The "Conclusions and Recommendations" are full and clear: "We are strongly convinced. We believe that the time has come when this step forward in the development of our public-school system ought to be taken." And it is recommended that provision be made for the introduction of manual training into each State normal school—wood work for all students, iron work for young men, and sewing for young women, as much as could be accomplished in a course of twelve weeks if the time were chiefly given to it; the work to be accompanied at every step with drawing in a progressive course. That an appropriation be made to each State normal school of \$5,000 for plant, and \$2,000 a year for maintenance. That after 1890 no certificate or diploma be granted to any pupil or graduate who shall not have completed at least the equivalent of a six-weeks' course in wood work; and, to train teachers already em-

ployed, a summer school in wood work and iron work at the State College. A moderate annual appropriation to such school districts as shall establish manual training. That provision be made for the introduction of drawing as a required study in every school in the State; and to require every district, in subsequent buildings, to provide rooms for manual training, and for the grouping of schools, and for special instructors. That there be a special deputy superintendent of public instruction as director of manual training. That the system be introduced into the reformatory institutions, and, in case any change be made in the provisions for maintaining soldiers' orphan schools, at least wood work for boys and sewing and cooking for girls be introduced. This report has not yet been fully acted upon by the Legislature. The Pennsylvania State College, though a manual labor school of agriculture and the mechanic arts, provides a great deal of instruction upon manual training lines for the first two years.

Pittsburg, encouraged by the generous offer of Henry Phipps, Jr., to provide a teacher, opened a kitchen school for the training of young women in the art of cooking, which has succeeded well. Several small towns on Alleghany river have made experiments in the simpler kinds of wood and iron work.

In Philadelphia the movement has assumed a very considerable magnitude, and the school authorities are making provision for its introduction into all the grades of the city schools. Several institutions of a higher grade, for the education of young men for the arts and industries, have long existed here, and the excellent work done by them has created a public sentiment in favor of eye and hand training which does not exist in most sections of the State. The first manual training school for boys graduated its first class in June, 1888. By that time there were more than 300 pupils. The school was crowded, and 30 applicants properly qualified had to be turned away. A second school for boys has been opened.

Girard College Manual Training Department, described in the former article, continues to succeed upon a strict adherence to the Russian system, "training for instruction, not construction." It has been found necessary to guard against too much specializing and too much machinery.

The Drexel Institute of Art, Science, and Industry, founded in 1891 by Anthony J. Drexel, with a gift of \$2,000,000 for building and endowment, will, in January, 1892, open classes in a normal department fitted for courses in manual training. Tuition fees are extremely moderate, and there are to be 160 scholarships in all; 15 in the manual training.

Tidioute opened in 1888 what is often called the industrial annex upon the public schools for elective courses; which are taken with much interest and good results.

Westchester opened a manual training room in 1889; convenient, well-lighted, with deadened floor and ceiling, and thoroughly well fitted up for instructing 18 students at a time. This department is in excellent working order, and has a two years' course open to boys of the senior and junior high-school classes, and girls who expect to teach. There are 86 pupils, divided into

6 classes, who have nearly two hours a week at the bench or lathe, and a half-hour at mechanical drawing.

The Wilkesbarre schools have joinery and sewing.

Rhode Island.—Newport has made a beginning in manual training under the Townsend fund, and the Board of Education contemplates the erection of a building to meet all the requirements of a systematic course. A sewing and cooking school, on manual training principles, has been maintained for several years chiefly through the exertions of Miss Katherine Wormeley, and wood working has been introduced into the boys' schools.

Providence, in several of the grammar schools, has lately given special attention to the teaching of drawing. Instruction has been given in the handling of tools, and a cooking school, with a special teacher, has been arranged for certain of the grammar schools. A new building for a manual training high school is nearly completed.

Bristol school board maintains a cooking school.

Pawtucket is about to build a new high school, with provision for a manual training course.

South Carolina.—Claflin University, Orangeburg, has a department of manual training. Over \$20,000 has been spent in supplying outfits for the various industrial departments in which these classes will be taught. The industrial education work that the university is doing for the colored people of the South is very great and valuable.

The Winthrop Training School for teachers, at Columbia, provides normal instruction in manual training. This school is exclusively for young women who already have a good education, and only those who intend to teach are wanted there.

Virginia.—In the Virginia Agricultural and Mechanical College, at Blacksburg, there is systematic instruction in drawing and in the use of iron-working tools upon the method of the St. Louis Manual Training School. The course runs through three years, and averages six hours' work a week.

The Miller Manual Labor School of Albemarle, Crozet Station, also has instruction on the plan of the St. Louis school. The complete course is four years.

Washington.—The Seattle High School has an industrial course, which is such a modification of the scientific course as provides for work in shop and laboratory. Mechanical drawing and wood work are fairly started and obtaining good results, even with imperfect facilities. A complete course has been arranged similar to those in the older manual training schools of the country, with wood carving and domestic economy for girls. The object is not to teach any trade, but to train the hands and eyes of the pupils while their minds are being developed, and to interest them in the direction of manual labor, domestic duties, and the accompanying sciences.

Wisconsin.—In Appleton manual training was introduced into the Ryan High School in 1889. There is a course in drawing, including working drawings obtained from the manufacturers of the city; carpentry, for which there is a workshop for 15 boys at a time; forging, and wood carving for the girls.

Eau Claire schools, since 1885, have had manual training as part of the work of the eighth grade, grammar, and of the high school. The course covers three years, with lessons in the use and care of tools, in carpentry, turning, forging, etc., and drawing. Girls have wood carving a part of each year. The enrollment is increasing. A new high school is under contract, to contain accommodations for the manual training school.

MARYLAND, a Middle Atlantic State, one of the original thirteen, ratified the Constitution April 28, 1788; area, 12,210 square miles. The population, according to each decennial census, was 319,728 in 1790; 341,548 in 1800; 380,546 in 1810; 407,350 in 1820; 447,040 in 1830; 470,019 in 1840; 583,034 in 1850; 687,049 in 1860; 780,894 in 1870; 934,943 in 1880; and 1,042,390 in 1890. Capital, Annapolis.

Government.—The following were the State officers during the year: Governor, Elihu E. Jackson, Democrat; Secretary of State, E. W. Le Compte; Treasurer, Edwin H. Brown; Comptroller, L. Victor Baughman; Attorney-General, William P. Whyte; Secretary of State Board of Education, M. A. Newell; Tax Commissioner, Frank T. Shaw; Chief Justice of the Court of Appeals, Richard H. Alvey; Associate Justices, John M. Robinson, James McSherry, Levin T. H. Irving, William S. Bryan, John P. Biscoe, Oliver Miller, and David Fowler.

Population by Races.—The following table shows the white and colored population of the State in 1880 and 1890, as reported by the Federal census:

COUNTIES.	WHITE.		COLORED.	
	1890.	1880.	1890.	1880.
Allegany.....	40,096	36,468	1,470	1,549
Anne Arundel.....	19,441	14,649	14,648	18,577
Baltimore.....	62,540	72,766	10,369	10,565
Baltimore city.....	366,920	278,584	67,826	58,716
Calvert.....	4,757	4,442	5,103	5,696
Caroline.....	10,008	9,600	8,895	4,166
Carroll.....	30,190	28,706	2,185	2,286
Cecil.....	21,880	22,644	3,976	4,464
Charles.....	6,975	7,700	8,215	10,848
Dorchester.....	16,085	14,694	8,808	8,476
Frederick.....	42,865	42,962	6,646	7,520
Garrett.....	14,030	12,068	188	112
Harford.....	22,416	21,885	6,577	6,657
Howard.....	12,096	11,741	4,178	4,999
Kent.....	10,416	10,400	7,055	7,205
Montgomery.....	17,472	15,608	9,710	9,150
Prince George.....	14,882	13,965	11,245	12,486
Queen Anne.....	11,816	12,067	6,645	7,189
St. Mary.....	8,060	8,244	7,750	8,690
Somerset.....	14,502	12,974	9,658	8,694
Talbot.....	12,148	11,736	7,587	7,329
Washington.....	87,191	85,495	2,990	8,066
Wicomico.....	14,600	12,948	5,830	5,073
Worcester.....	12,893	12,522	6,854	7,017
The State.....	824,149	724,698	218,004	210,280

There were 197 Chinese, 6 Japanese, and 34 Indians in the State in 1890.

Finances.—The total revenue received into the treasury during the fiscal year 1891 was \$2,827,568.29, and the balance Sept. 30, 1890, was \$666,845.94, making the total in the treasury during the fiscal year \$3,494,414.23. The receipts for 1891 are less than for 1890 by \$3,033,036.65. This large decrease is mostly due to the sale of the bonds of the "exchange loan of 1889," which occurred during 1890.

The total disbursements during the fiscal year 1891 were \$2,953,083.93, being less than those of 1890 by \$2,731,402.08. This difference is due to the redemption during 1890 of the State 5-per-cent. sterling bonds. The balance at the close of the fiscal year was \$541,330.30.

The estimates of receipts for the current fiscal year amount to \$2,082,559.90, which, if realized and added to the balance on Sept. 30, would make the total in the treasury during the current fiscal year \$2,623,890.20.

The receipts on account of the Free-school fund during the fiscal year were \$69,272.21. This, added to the balance standing to the credit of this fund Sept. 30, 1890, \$6,938.52, makes an aggregate during the fiscal year 1891 of \$76,210.73. The disbursements during the same time were \$71,052.21, leaving a balance on Sept. 30, 1891, of \$5,158.52.

The receipts into the several sinking funds for the fiscal year were:

General sinking fund.....	\$10,912 25	
Balance, Sept. 30, 1890.....	2,884 07	\$13,746 89
Sinking fund treasury relief loan...		109,758 85
Sinking fund defense redemption loan.....	\$424,714 24	
Balance, Sept. 30, 1890.....	852 38	425,566 57
Sinking fund exchange loan 1889....	\$97,269 00	
Balance, Sept. 30, 1890.....	18,684 50	55,968 50
		\$604,969 74

There was invested on account of these sinking funds during the past fiscal year, \$604,888.53, leaving cash balance to the credit of the treasury relief sinking fund of \$81.21.

The general sinking fund established by the investments from surplus funds of the State treasury contains stocks and bonds aggregating..... \$273,003 25

Treasury Relief Loan Sinking fund established in the fiscal year 1880, in accordance with a special tax for the redemption of \$500,000 of treasury relief bonds, contains stocks and bonds aggregating..... 562,910 50

The Defense Redemption Loan Sinking fund, established in the fiscal year 1884 for the redemption of that loan, as by special tax, contains stocks and bonds aggregating..... 1,580,521 78

The Exchange Loan of 1889 sinking fund, established by the Board of Public Works by exchanging the preferred stock of the Baltimore and Ohio R. R. Co. held by the State for bonds of said loan, by virtue of Art. XII, sec. 3, of the Constitution, contains stocks and bonds aggregating..... 1,298,208 50

Total stocks and bonds held by sinking funds..... \$3,719,044 48

According to the Comptroller's report, the acts of the General Assembly of 1878 and 1888 levying a special tax of 1½ cent on each \$100 of the taxable property, to meet the interest and create a sinking fund for the redemption of the bonds of the treasury relief loan, can now be repealed, but he suggests that this special tax be added to that levied to pay the interest and create a sinking fund for the redemption of the exchange loan of 1886, as the tax of ½ cent on each \$100 is inadequate to meet even the interest on said loan; consequently, no sinking fund could be created.

The receipts of the oyster fund amount to \$52,260.33, which is less than those of the preceding year by \$5,918.34. The expenditures have been \$73,645.81, which exceed those of the

preceding year by \$2,689.90. In the expenditures is included \$2,726.68 for building two schooners. The amount standing to the credit of this fund at the close of the fiscal year 1891 was \$79,720.76.

The total indebtedness of the State at the close of the fiscal year 1891 was \$10,721,642.52, an increase of \$30,518.07; but this is only temporary, as the amount of the "exchange loan of 1891," issued at the close of the year, was that much greater than the amount exchanged and redeemed of the old loans, for the exchange and redemption of which this new loan is being issued. Deduct from the gross debt the productive stocks held by the State, and the cash and stocks held by the sinking fund, and the net debt will be \$3,876,046.85, a decrease of \$536,170.77 since last year.

The assessment of the real and personal property in the several counties and city of Baltimore for 1891 is \$510,003,077, being greater than that of 1890 by \$27,818,253. The levy for State taxes for 1891 on the real and personal property of the State, at 17½ cents on each \$100, amounted to \$905,253.50.

The State levy for public schools for the fiscal year 1891 amounted to \$535,503.25. The receipts of school tax for 1891 amounted to \$576,350.64, an increase over that of 1890 of \$8,418.36. The disbursements of the school tax amounted to \$607,205, an increase of \$5,217.99.

United States Direct Tax.—By act of Congress, chapter xlv, of 1861, a direct tax of \$20,000,000 was levied upon the several States to meet the expenses of the war then being waged, and Maryland's quota of this tax was \$436,823.33. The General Government made every provision to collect this tax, but at the same time accorded the privilege to the States to assume their quotas, and for prompt payment a discount of 15 per cent. was stipulated. Maryland assumed her quota of the levy, and by an act of the General Assembly of 1862, chapter cxliii, issued the "Maryland defense loan" to provide means for the defense of Maryland, and especially to meet the State's proportion of the United States direct tax, levied, or to be levied, for the purpose of suppressing rebellion and maintaining the integrity of the Union. On June 28, 1862, Maryland paid her proportion of this war tax, \$436,823.33, less 15 per cent., leaving the net sum \$371,299.83.

Congress at its last session passed an act to credit and pay to the several States and Territories and the District of Columbia all moneys collected under the direct tax levied by the act of Congress approved Aug. 5, 1861. The Comptroller suggests that after the amount (\$371,299.83) paid to the General Government is returned to the State treasury, it should be placed to the credit of the Defense Redemption Loan Sinking fund, a fund created for the redemption of loans issued to defray the expenses incurred by the State during the civil war.

Education.—The whole number of different pupils enrolled in the schools of the State during the year was: White, 189,214; colored, 34,796; total, 224,010. The average number of pupils in daily attendance in all schools was: White, 106,170; colored, 17,273; total average attendance, 123,443. The total expenses for

school purposes derived from all sources—State, county, and city—were \$2,237,164.33, of which amount there was paid from the State treasury for white schools \$470,345.16; for colored schools, \$122,983.88; total, \$593,329.04. The amounts received from the State treasury for white and colored schools, respectively, were \$4.43 each for the white pupils in average daily attendance and \$7.12 each for the colored pupils in average daily attendance. The total amount of expenses of all the schools in the State shows an expenditure of \$9.98 each for the total number of pupils enrolled during the year, and of \$18.12 each for the total number of pupils in average daily attendance. The average daily attendance of white pupils was only 56 per cent. of the number enrolled, and of colored pupils only 50 per cent.

The State Normal School during 1891 was full to its utmost capacity, reaching the limit of numbers fixed by law, and the applicants for admission far exceeded this limit. The Board of Education and the Association of School Commissioners of Maryland have united in requesting the General Assembly to provide for enlarging the building.

Chesapeake and Ohio Canal.—Subsequent to the filing of the opinion of Judge Alvey, on Oct. 2, 1890, detailed in the "Annual Cyclopædia" for 1890, an appeal was taken by the State and the canal company to the Court of Appeals, but the decree of the court below was affirmed in February, 1891. The trustees were unable to complete the repairs by May 1, 1891, as stipulated, and the time was extended, and, by the latter part of August the canal was sufficiently repaired to permit transportation. The cost of repairs largely exceeded the highest estimate, and has amounted to \$360,000, while the tonnage has only been about 50,000 tons of coal and the gross receipts about \$20,000. The practical results thus far accomplished are: The canal has passed under the control of the Baltimore and Ohio Railroad Company; an additional debt of at least \$360,000, taking priority of the claims of the State, has been created; the revenues are not sufficient to pay the expenses of the restored work, and a sale, sooner or later, seems to be inevitable, perhaps, even before the expiration of the four years named in the court's decree. The proceeds of this sale will in all probability prove not more than enough to reimburse the trustees for the cost of these repairs and to pay the repair bonds of 1878, if indeed they prove adequate for these purposes, and consequently the State and the bondholders of 1844 will get nothing. Had the lease as authorized by the act of 1890 been made, the results would have been very different. A railroad competing in the interests of the people with the Baltimore and Ohio Railroad would have been built along the line of the canal from Cumberland to Georgetown; the repair bondholders of 1878 and the labor claims of \$70,000 for repairs prior to the recent expenditures would have been paid in full; the bondholders of 1844 would have received 25 per cent. of their bonds, and the State would be in the regular receipt of an annuity of \$15,000. The building of a railroad through Allegany, Washington, Frederick, and Montgomery counties would also

have added to the State's revenues from the tax on its gross receipts, while the benefit to these four counties in the increase of their taxable basis would have been very great. Moreover, the project was to extend the proposed railroad from Georgetown to Baltimore, so as to make that city its real terminus, and thus to give to it the manifest and great advantages of being an outlet for the coal from West Virginia over the West Virginia Central and Pittsburg Railway, and moreover lead to commercial and business relations of incalculable value with that great and growing region. The experiment of continuing to spend money on the canal in the hope of making it pay, however well meant, has been a costly one to the State, while to the bondholders of 1844 it has thus far proved to be anything but a success. The long-cherished policy of the State to secure for the people two competing lines of transportation from the coal fields has been reversed, and both of these highways are now under the control of the same corporation, and the rates of toll and transportation can be fixed without the check of competition.

The Oyster Industry.—The general measurers at Baltimore report that the sales in that city from Oct. 15 to Dec. 15, 1890, were 1,701,080 bushels, and from Oct. 15 to Dec. 15, 1891, 2,259,410 bushels, an increase of about 33 per cent., which must be credited to the Culling law, as the percentage of decrease had previously been in a greater ratio; but to make this law effective it will be necessary to extend its provisions to all persons having small oysters in possession, and thereby destroy all marketable value in them. The Governor, in his message, recommends the limiting of the time for taking oysters with scoops or dredges to Nov. 1; and that all licenses to take oysters, either with tongs or with scoops or dredges, should expire with the close of the season. He adds:

I must also call your attention to the condition of the oyster fund. The receipts from licenses to dredge are constantly decreasing, while the expense of maintaining and keeping in order the boats of the fishery force is increasing as the boats get older. The total receipts for this fund were in 1889 \$61,562.08; in 1890, \$58,178.67; and in 1891, \$52,260.33; while the expenditures were in 1889 \$63,306.09; in 1890, \$70,955.91; and in 1891, \$73,645.81; showing at present an annual deficit of over \$20,000. The license to dredge, which is at present the only source of revenue, is as great as it will bear, and a tax on the bushel is objectionable. I can see no mode of relief except to require the scrapers and tongs to contribute to this expense. If the licenses to tong or to scrape were all issued from the Comptroller's office to the clerks of the circuit courts, and one third of the receipts therefrom were paid over to the State, it would probably be sufficient for all present emergencies; and if the license to tong was made personal and fixed at \$3 it would bear more uniformly on the tonger and at the same time give a greater revenue to the counties. A thorough revision of our oyster laws seems to be absolutely necessary.

A cause of most embarrassment in the enforcement of our laws is found in the lack of harmony between the laws of Maryland and those of Virginia. The Legislature of that State is now in session, and has the oyster question under consideration, and I feel sure that this is an opportune time to secure their co-operation; I would, therefore, recommend that you pass a joint resolution early in your session

appointing a committee to confer with that body on this subject. I would also suggest that such conference should embrace the questions connected with the common rights of fishery in the Potomac and Pocomoke. The large and valuable oyster grounds of the Potomac, which belong entirely to Maryland, are a subject of concurrent legislation, and enjoyed by the citizens of Virginia equally with our own, while the citizens of Maryland are entirely excluded from any rights in the Pocomoke.

The eighth article of the compact of 1785 provides that all laws and regulations in relation to the preservation of fish in the Potomac and Pocomoke, within the limits of Virginia, shall be made with the mutual consent and approbation of both States.

The Penitentiary.—The annual report of the Maryland Penitentiary shows that financially it has been more than self-sustaining. The Board of Directors, after paying all expenses, paid into the State treasury in 1890 a surplus of \$1,991.64, and are ready to pay for 1891 a surplus of \$3,022.35.

By an act of the General Assembly of the last session \$25,000 a year was appropriated for ten years for the purpose of purchasing additional grounds for the extension of the Maryland Penitentiary and for the erection of necessary buildings thereon. It also says that:

It was suggested two years ago, with a view of the State's doing what it could to aid the farmers of the State, to have binding twine manufactured at the Maryland House of Correction by the prisoners confined therein; but upon investigation it was deemed inexpedient, owing to the fact that most of the inmates were under short sentences, and are a class of persons generally unfitted for such work. But with the extension of the Maryland Penitentiary, it would be entirely feasible to erect the necessary machinery at a comparatively small cost for the manufacture of binding twine; in doing so the State would not conflict with any similar manufactory in the State conducted by private enterprise, while, at the same time, it would be a vast saving to those engaged in wheat raising throughout the State. Under the present system the prison labor is hired out to manufacturers, and should the State erect a factory and manufacture binding twine, by charging the consumers with the cost of the raw material and the cost of the work, at the price now charged for such labor, the farmers of the State would be able to secure their binding twine at a much less price than they are now compelled to pay for such material, and, therefore, the enactment of such a law is recommended.

The Australian Ballot Law.—The General Assembly at its last session passed the Australian ballot law, providing for the printing, at the expense of the State, of an official ballot, and the appointment by the Governor of election officers, with a view of securing greater fairness and freedom in elections. From all sections of the State where the law applies it has received approval and commendation. There are counties where the provisions of the law do not apply, and it is recommended by the Governor that the law shall be extended to all the counties in the State, and that the whole of the election laws be revised and re-enacted. Indeed, the application of the Australian system to primary elections is advised by him.

Political.—At the election held in November for Governor the Democratic candidate, Frank Brown, was elected, receiving 108,539 votes, while the Republican candidate, W. J. Vannort,

received 78,388 votes, and Edwin Higgins, the Prohibition candidate, 5,120 votes. At this election six proposed amendments to the State Constitution were voted upon. The first empowered the Governor to disapprove separate items in appropriation bills; the second restricted the exemption of corporations from taxation; the third provided for uniformity of taxation; the fourth related to the election of county commissioners; the fifth authorized the sale of the State's interest in all works of internal improvement; and the sixth empowered the Legislature to provide for the taxation of mortgages, if such taxation is imposed in the county or city where the mortgaged property is situated. All of these amendments were adopted except the third. The State Legislature as now constituted includes in the Senate 22 Democrats and 4 Republicans, and in the lower house 78 Democrats, 10 Republicans, and 3 Independents, giving a Democratic majority of 18 in the Senate, 65 in the House, and 83 in a joint ballot.

MASSACHUSETTS. A New England State, one of the original thirteen, ratified the Constitution Feb. 6, 1788; area, 8,315 square miles. The population, according to each decennial census, was 378,787 in 1790; 422,845 in 1800; 472,040 in 1810; 523,159 in 1820; 610,408 in 1830; 737,699 in 1840; 994,514 in 1850; 1,231,066 in 1860; 1,457,351 in 1870; 1,783,085 in 1880; and 2,238,943 in 1890. Capital, Boston.

Government.—The following were the State officers during the year: Governor, William E. Russell, Democrat; Lieutenant-Governor, William H. Haile, Republican; Secretary of State, William M. Olin, Republican; Treasurer, George A. Marden, Republican; Auditor, William D. T. Trefry, Democrat; Attorney-General, Albert E. Pillsbury, Republican; Railroad Commissioners, Everett A. Stevens, George G. Crocker, and Edward W. Kinsley, who died on Dec. 26; Chief Justice of the Supreme Court, Walbridge A. Field; Associate Justices, Charles Devens (who died on Jan. 7, and was succeeded by John Lathrop), William Allen (who died on June 4, and was succeeded by James M. Barker), Charles Allen, Oliver Wendell Holmes, Jr., Marcus P. Knowlton, and James M. Morton.

Finances.—The receipts and payments on account of revenue for the year were as follow: Cash in the treasury Jan. 1, 1891, \$1,488,057.19; cash received during the year, \$18,792,998.53; payments during the year, \$18,956,569.52; cash in the treasury Jan. 1, 1892, \$1,324,486.20. The estimated revenue for the year, exclusive of the direct tax, was \$3,782,837.50, and the actual revenue \$4,329,919.79. Adding to the latter sum the direct tax receipts, \$1,500,000, and the balance on Jan. 1, 1891, \$1,488,057.19, there is found to be a total actual revenue of \$7,317,976.98. The actual expenses for the year were \$5,965,171.94, as against \$5,833,353.24 in 1890. The principal sources of revenue were as follow: From corporation taxes, \$762,826.68; from bank-stock taxes, \$468,689.71; from savings-bank taxes, \$1,053,606.28; from insurance companies, \$317,432.64; from excise tax on life-insurance companies, \$127,802.45; from liquor licenses, \$573,714.10; from State-prison industries, \$146,699.40; from interest on deposits, \$174,908.23. The principal expenses may be classified as fol-

low: Interest, \$1,586,491.72; legislative department, \$315,603.77; executive and other departments, \$93,244.15; State House and Commonwealth Building, etc., \$39,233.99; sundry commissions, \$307,300.19; printing, \$115,906.36; educational, including State Library, \$199,007.60; judiciary, \$254,546.67; public buildings, \$515,392.30; agriculture, including scholarships, etc., \$61,764.01; State and military aid, including expenses, \$457,352.87; charitable, \$602,306.98; reformatory and correctional, \$810,568.68; military, \$235,186.18.

The transactions on account of the several sinking funds and trust deposits show the following aggregates for the year: Cash on hand Jan. 1, 1891, \$5,282,185.58; cash receipts during the year, \$20,037,376.82; total, \$25,319,562.40; payments on these accounts, \$20,776,287.63; cash on hand Jan. 1, 1892, \$4,543,274.77.

The State debt on Jan. 1, 1891, was \$31,381,158.30, and on Jan. 1, 1892, \$27,929,415.55, a decrease of \$3,451,742.75. This decrease is accounted for by the payment from the sinking fund of the debt incurred on account of the Troy and Greenfield Railroad and the Hoosac Tunnel, amounting to \$3,834,742.75, and by the issue of new bonds as follow: For the metropolitan sewerage loan, \$368,000; for the armory loan, \$15,000; total issue, \$383,000.

The total value of the several sinking funds held by the State on Jan. 1, 1891, was \$21,568,960.37; the increase during the year, \$1,355,696.41; the decrease by payment of the funded debt, \$3,834,742.75; and the total value of the funds on Jan. 1, 1892, \$19,089,914.03.

Valuation.—The total assessed valuation of property in the State for 1891 was \$2,245,042,273, personal estate being assessed at \$566,496,761, and real estate at \$1,678,545,512. The increase in the total assessment over 1890 was \$90,907,647. Included in the assessment were 4,498,012 acres of land, 361,066 dwellings, 181,705 horses, 257,396 neat cattle, 47,536 sheep, and 40,776 swine. Personal estate in Suffolk County, which includes the city of Boston, was valued at \$207,821,828, and real estate at \$677,828,400. For 1891 a total State tax of \$1,500,000 was levied.

Legislative Session.—The General Court of 1891 assembled on Jan. 7 and was prorogued on June 11, having been in session one hundred and fifty-six days. Although the Senate consisted of 20 Republicans and 20 Democrats, there was no delay in the organization of that body, Senator Henry H. Sprague, Republican, being re-elected President without opposition. In the House, the Republicans, being in the majority, re-elected William E. Barrett as Speaker, without opposition. During the session 431 acts and 118 resolves were passed and became law. A bill redistricting the State for members of Congress, on the basis of the national census of 1890, was passed and received the Governor's approval. The State is thereby divided into 13 districts, in 5 of which are included portions of the city of Boston.

No opposition was offered this year to the demands of the farmers for legislation protecting them against the sale of imitation butter. Early in the session an act was passed prohibiting the manufacture and sale of any such article, but allowing the production and sale of oleomargarine

without coloration and in such a manner as would apprise the consumer of its real character. The inspectors of milk were given authority to enforce these provisions. Later another act was passed which imposes a penalty upon any person selling or offering for sale oleomargarine, butterine, or other substance imitating butter, whether colored or not, to any one who asks for butter. It is further provided that dealers in oleomargarine and like substances shall post conspicuously in their places of business a placard saying that oleomargarine or butterine is sold there; peddlers are required to post upon each of their vehicles a placard showing that they are licensed to sell oleomargarine; tubs or packages must be labeled with a placard bearing the word "oleomargarine"; and at hotels, restaurants, and lunch counters guests or patrons shall be notified when served with any substance in place of butter. Every opened tub or package offered for sale shall have upon it a placard bearing the word "oleomargarine." A dairy bureau, consisting of three members of the Board of Agriculture appointed by the Governor, is directed to enforce this act, with the aid of an assistant secretary of the Board of Agriculture, and is authorized to expend not over \$4,000 in this work.

The act of 1890 creating the Gypsy-moth Commission was repealed, and the work of exterminating the gypsy-moth pest was intrusted to the State Board of Agriculture.

The clause in the license law forbidding the sale of liquor over a public bar was stricken out, and a provision was introduced prohibiting the sale of liquor at tables in any room where liquor selling is the exclusive or principal business. A radical change was made in the law respecting drunkenness. Police officers may now release from custody any person arrested for intoxication, after he has become sober, if satisfied from his affidavit that he has not been arrested for intoxication twice before within a year. Whether the prisoner is released or not, his affidavit shall be referred to a probation officer, who shall investigate the court records, and if there is no record against him of two arrests within the year, no further action shall be taken in the case, except to discharge the person if he is still under arrest; but if the records show two or more arrests, he shall be tried for drunkenness, being first rearrested if he has already been discharged. At the same time the penalty for drunkenness was changed to imprisonment for not more than one year, without fine, in every case.

The only important labor measure enacted prohibits the imposition of fines upon or the withholding of wages from weavers for imperfections that may arise in the process of weaving. The State Supreme Court, later in the year, decided that this act was unconstitutional and void.

Cities and towns were empowered to manufacture and distribute gas and electricity. A tax of 5 per cent, was imposed on collateral inheritances, when the estate is valued at over \$10,000.

The city of Boston was authorized to borrow outside of its debt limit \$3,500,000 for park purposes and \$1,000,000 for completing the public-library building. A board of survey was created with authority to lay out the course and grade

of streets over unimproved areas in the city. No streets shall be built over the areas so surveyed except those laid out on the plans of this board. The question of rapid transit in the city was referred to a commission, consisting of the mayor and city engineer, three members appointed by the mayor, and three appointed by the Governor.

For the purpose of preventing the manufacture, sale, or importation of clothing made in unhealthful places, the appointment of two additional inspectors on the district police was authorized.

Fraternal beneficiary organizations, endowment companies, and bond schemes received a large share of attention. A stringent bill affecting the first named was reported, and a contest arose as to whether it should affect all companies or only those formed since a certain date in 1890, the result being that the whole matter was sent over to the next Legislature. The bond schemes were forbidden.

Being satisfied that the Cape Cod Ship Canal Company was unable to complete the work intrusted to it, the Legislature refused an extension of its charter, and conferred its rights and franchises upon the Boston, Cape Cod, and New York Canal Company, on certain conditions.

The sum of \$75,000 was appropriated to secure a representation of the resources and progress of the State at the Columbian Exposition in 1893.

Two constitutional amendments which passed the Legislature of 1890—one abolishing the poll tax as a prerequisite for voting, the other providing that a majority of the members of each branch of the Legislature shall form a quorum to do business—were approved again at this session and provision was made for their submission to the people in November. An amendment for biennial elections, which was passed in 1890, failed of approval at this session. There was also passed for the first time an amendment striking out the constitutional requirement that the Governor shall be seized in his own right of a freehold in the Commonwealth of the value of £1,000.

Other acts of the session were as follow:

Giving to notaries public the jurisdiction and right to act in all counties.

Imposing a penalty for unlawfully issuing certificates of divorce.

Appropriating \$27,000 to enable the State Board of Health to examine into the best methods for protecting the purity of inland waters.

To prohibit the employment of prisoners outside of their place of confinement.

Prohibiting after Nov. 1, 1892, the heating of steam railroad passenger cars by stoves or furnaces placed within or attached to the car.

To authorize the State Board of Agriculture to collect and circulate information relating to abandoned farms.

To prevent excessive charges in the redemption of tax titles.

Incorporating the town of West Tisbury.

Requiring the polls to be opened at 6 o'clock in the forenoon on the days appointed for the election of State and city officers.

To provide a uniform system of counting and canvassing votes cast at elections.

Prohibiting the sale to any child under sixteen years of any candy or other article inclosing liquid or sirup which contains more than 1 per cent. of alcohol.

Constituting nine hours a day's work for county employés.

Limiting the height of buildings in cities to 125 feet above the street; elevators, sugar refineries, steeples, domes, towers, and cupolas excepted.

Giving the Commissioner of Corporations authority to change the names of corporations.

Raising the compulsory school age to fifteen years in cities and towns where opportunity is furnished for industrial education.

To authorize the Superior Court, in criminal cases, to sentence persons convicted, although an appeal has been taken, where such appeal seems frivolous.

To prohibit the manufacture and sale of children's toys and confectionery containing arsenic.

Giving to the Superior Court exclusive original jurisdiction of capital crimes. [The Supreme Court formerly had exclusive jurisdiction.]

Establishing a nautical training school, and appropriating \$50,000 for its maintenance, provided a suitable vessel for such school be furnished by the United States.

Giving the Commissioners of Savings Banks authority to prevent foreign co-operative banks from transacting business within the Commonwealth.

To establish a board of commissioners for the promotion of uniformity of legislation in the United States.

Incorporating the Trustees of Public Reservations, for the purpose of acquiring, maintaining, and opening to the public, under suitable regulations, beautiful and historic places and tracts of land in the Commonwealth.

To establish a sinking fund for the State House loan, due in 1901.

Education.—The following public-school statistics cover the school year 1890-'91: Number of children between five and fifteen years, 376,491; number of all ages in the schools during the year, 376,986; average attendance, 278,603; teachers employed—men 1,016, women 9,630; average monthly wages of male teachers, \$118.07; female teachers, \$48.17; number of public schools, 7,239; average length of school year in months, 8.9. During the year 244 high schools were maintained, with 26,294 pupils in attendance, an increase of 3 schools and 977 pupils. Evening schools to the number of 266 were supported in 55 cities and towns. The number of teachers employed therein was 1,018, the total number of pupils enrolled 28,453, and the average attendance 14,526. The whole amount of money raised by taxation for the support of public schools, including only wages of teachers, fuel, and care of fires and school-rooms, was \$5,707,514.37, an increase of \$182,631.72 for the year. The amount expended for new school-houses was \$1,026,032.27. The expenditures for schools, exclusive of the sum paid for repairing and erecting school-houses, was \$6,652,972.67, or \$17.67 for each child of school age. The total expenditures, including repairs and new school-houses, aggregated \$8,554,545.57 or \$22.72 for each child of school age.

During the year 471 private schools and academies, having an attendance of 59,030 pupils, were in operation.

The new law under which two or more small towns may unite in securing the services of a trained superintendent of schools is producing satisfactory results.

At the State normal schools the following pupils were in attendance during the year: At Bridgewater, 234; at Framingham, 167; at Sa-

lem, 269; at Westfield, 139; at Worcester, 170; at the Normal Art School, 225.

Charities.—The following is a summarized statement of the condition of the State charitable institutions: Danvers Lunatic Hospital, patients on Oct. 1, 1890, 813; admitted during the year ensuing, 366; discharged, 362; remaining Sept. 30, 1891, 817; total expenses, \$166,411.52. Northampton Lunatic Hospital, patients on Oct. 1, 1890, 495; admitted, 141; discharged, 183; remaining Sept. 30, 1891, 453; total expenses, \$82,721.18. Westborough Insane Hospital, patients on Oct. 1, 1890, 508; admitted, 397; discharged, 412; remaining Sept. 30, 1891, 493; total expenses, \$98,008.28. Taunton Lunatic Hospital, patients on Oct. 1, 1890, 672; admitted, 298; discharged, 239; remaining Sept. 30, 1891, 671; total expenses, \$116,489.46. Worcester Lunatic Hospital, patients on Oct. 1, 1890, 785; admitted, 549; discharged, 509; remaining Sept. 30, 1891, 825; total expenses, \$172,327.20. Worcester Insane Asylum, patients on Oct. 1, 1890, 299; admitted, 165; discharged, 53; remaining on Sept. 30, 1891, 411; total expenses, \$68,042.07. State Almshouse at Tewksbury, insane department, patients on Oct. 1, 1890, 364; admitted, 42; discharged, 42; remaining on Sept. 30, 1891, 364; almshouse department proper, inmates on Oct. 1, 1890, 802; admitted, 2,815; discharged, 2,772; remaining on Sept. 30, 1891, 845. State Farm at Bridgewater, inmates on Oct. 1, 1890, 545; admitted, 733; discharged, 666; remaining on Sept. 30, 1891, 612 (of the latter number 223 are insane persons); total expenses, \$74,989.09. At the Perkins Institution for the Blind there were 208 pupils on Sept. 30. The total receipts for the year, including a balance of \$60,415.35, were \$290,466.54, and the expenditures and investments \$284,450.17, leaving a new balance of \$6,016.37. At the School for the Feeble-minded at Waltham there were 296 pupils on Sept. 30, 1890; 83 were admitted during the year and 34 discharged, leaving 345 in the school on Sept. 30, 1891. The total expenses of the institution for the year, including \$78,846.24 for new buildings, were \$150,288.26.

Prisons.—The number of convicts at the State Prison on Oct. 1, 1890, was 580; during the year following 164 convicts were received and 129 discharged, leaving 615 remaining on Sept. 30, 1891. The net cost of supporting the prison during the year was \$148,487.26, from which may be deducted the profit of \$10,075.65 derived to the State during the year from the manufactures and other industries carried on in the prison by convict labor. At the State Reformatory at Concord there were 733 prisoners on Oct. 1, 1890, 668 were received during the year ensuing, and 589 were discharged, leaving 812 remaining on Sept. 30, 1891. The current expenses of the institution were \$175,430.86, from which should be deducted \$16,922.66, the profit made upon the labor of prisoners, and \$6,953.36 received from rents, etc., leaving \$151,554.84 as the net cost of the institution for the year. The Reformatory Prison for Women contained 242 inmates on Oct. 1, 1890, 216 were received during the year following, and 210 discharged, leaving 248 remaining on Sept. 30, 1891. The expenditures for the year were \$50,611.85, and the receipts from labor of prisoners

and other sources \$12,739.95, making the net cost of the institution \$37,871.90.

At the several county prisons and houses of correction there were 3,945 prisoners on Oct. 1, 1890, 15,439 commitments to these institutions were made during the year following, 15,211 prisoners were discharged, and there were 4,173 remaining on Sept. 30, 1891.

The Industrial School for Girls, at Lancaster, on Sept. 30 contained 91 pupils; the Lyman School for Boys, 200; and the Primary School, at Monson (at which neglected and dependent children and those convicted of light offenses are cared for), 329, of whom 259 were boys, 58 girls, and 12 women.

Banks.—During the year 2 savings banks, 4 safe-deposit and trust companies, and 5 co-operative banks were organized and began business. There are now in the State 181 savings banks, with assets of \$390,784,807.51; 19 trust companies, with assets of \$82,124,296.16; 108 co-operative banks, with assets of \$11,874,530.14; 2 collateral loan companies, with assets of \$378,207.72; and 2 mortgage loan companies, with assets of \$1,891,704.73; making a total of 312 institutions, with assets of \$487,053,546.26. and an increase of 11 institutions, and of \$27,718,486.04 in assets. The savings banks show total deposits on Oct. 31, 1891, amounting to \$369,526,385.54, an increase of \$15,933,448.30 for the year.

Licenses.—At the December elections of this year 16 cities voted for license and 12 for no license, being a gain, compared with 1890, of 4 cities on the side of no license. The total city vote shows a majority of 8,274 votes against license. Of the 321 towns, about 250 voted no license.

Political.—On Sept. 1 a State convention of the People's party met at Boston and nominated the following candidates for State officers: For Governor, Henry Winn; for Lieutenant-Governor, William J. Shields; for Secretary of State, Joseph D. Cadle; for Treasurer, Thomas A. Watson; for Auditor, William O. Wakefield; for Attorney-General, Israel D. Andrews, succeeded on the ticket by Herbert McIntosh. At an earlier convention, held in Boston, an organization for the party had been perfected and a platform adopted, which embraced many of the doctrines of the Farmers' Alliance, and some of the principles of the Nationalists, a faction believing in government ownership and control of property and industries.

On Sept. 9 the Prohibitionists met in State convention at Worcester and nominated the following ticket: For Governor, Charles E. Kimball; for Lieutenant-Governor, Augustus R. Smith; for Secretary of State, Alfred W. Richardson; for Auditor, William O. Armstrong; for Treasurer, Samuel B. Shapleigh; for Attorney-General, Wolcott Hamlin. The candidate for Auditor was a colored man, his nomination being made for the purpose of attracting the colored vote, heretofore almost entirely Republican. The platform contains the usual denunciation of the liquor traffic, calling special attention to the great exportation of rum from Boston to Africa, amounting to over 100 barrels a day, and favors civil-service reform, universal suffrage without regard to sex, subject only to an educational qualification, restriction of immigration, a currency every dollar of which shall

be equal to the best known to commerce, and legislation to suppress trusts and to secure a more complete taxation of personal property. On the public-school question the following declaration was made:

The public common school is a foundation stone of the republic. We will sacredly guard it from removal or undermining by hostile hands. To this end, and that its power and beneficence may continue unabated, we are against any sectarian interference therewith, and would forbid the appropriation of any public money for the support of sectarian schools or teaching.

The Republican State Convention was held at Boston on Sept. 16. Two candidates for the gubernatorial nomination were presented to the convention, Hon. William W. Crapo and Hon. Charles H. Allen, of whom the latter was selected on the first ballot by the following vote: Allen, 713; Crapo, 514; scattering, 4. For the office of Auditor, Gen. John W. Kimball was selected over five competitors, Lieut.-Gov. Haile, Secretary of State Olin, Treasurer Marden, and Attorney-General Pillsbury were renominated without opposition. The platform approves the national Administration, denies the charges of Republican extravagance in enacting pension laws, favors further restriction of immigration, and contains the following:

It is a cardinal principle of the Republican party that full and adequate protection should be given to every citizen in every State and Territory of the Union in the enjoyment of his civil and political rights; and it is essential to the safety of our Government that the right of ballot and the purity of elections should be maintained sacred and inviolate.

We are unalterably opposed to the unlimited coinage of silver by this country, excepting upon a uniform international ratio to gold, and under similar restrictions and conditions, both as to the government and to individuals, as prevail in other leading nations of the world. We condemn the Democratic party for its indorsement of free silver in the party platforms in Ohio, Iowa, Indiana, Michigan, and 18 other States.

We again affirm our unwavering fidelity to the American system of protection, and our belief in its inestimable value to the interests of this country.

We favor the most efficient legislation for the restriction, prevention, and suppression of the evils arising from the sale of intoxicating liquors, and we demand that all laws for the promotion of this desirable result be faithfully, diligently, and vigorously enforced.

The standard of living and education among the working people is the true test of the prosperity of a country; their welfare is the welfare of the State, and all just and reasonable legislation calculated to maintain and advance the present high standard of Massachusetts in this regard, and to insure to all the full enjoyment of the fruits of their labor, should receive our earnest approbation and support.

On Sept. 29 the Democratic State Convention met at Worcester, and renominated Gov. Russell and Auditor Trefry by acclamation. John W. Corcoran was again made the candidate for Lieutenant-Governor, and Eldridge Cushman for Secretary of State. For Treasurer the nominee was James S. Grinnell, and for Attorney-General George M. Stearns. The platform contains the following:

The Republican party has fastened upon the Commonwealth a system by which the most important functions of our State government are vested in boards which are practically beyond the power of the Governor and responsible to nobody. We demand that

members of all commissions, as well as other administrative appointees, be made responsible to the people by being made accountable to the people's Governor.

We believe in free schools supplied with free textbooks. Believing not only in their maintenance, but in their constant improvement, we are in favor of establishing an efficient system of manual training for both sexes, and of increasing the school age in connection therewith.

We reaffirm our sympathy with all wise and constitutional measures in the interests of manual labor, and we renew the declarations upon this subject in our platform of last year; we indorse the recommendations contained in the Governor's inaugural message and his action in regard to suppressing the evils of the sweating system.

A demand was made for the repeal of the McKinley act so far as it increases rates of duties, and for the enactment of a genuine measure of tariff reform. The recent silver legislation of Congress was denounced; and the free coinage of silver, in the absence of international agreement, was disapproved.

A fourth ticket was placed in the field by a small faction, known as the Socialist Labor party, containing the following names: For Governor, Harry W. Robinson; for Lieutenant-Governor, George R. Peare; for Secretary of State, Edward W. Theinert; for Treasurer, Charles Friede; for Auditor, Squire E. Putney; for Attorney-General, James Waldo.

During the canvass, the Republican and Democratic candidates for Governor were heard upon the stump in every county of the State. The vote for Governor was as follows: Russell, 157,982; Allen, 151,515; Kimball, 8,968; Winn, 1,772; Robinson, 1,429. Although Allen was defeated, all the other candidates on the Republican ticket were elected by considerable pluralities. For Lieutenant-Governor, Haile received 157,216 votes; Corcoran, 145,865; Smith, 9,346; Shields, 2,399; and Peare, 1,471. The plurality of Olin for Secretary of State was 15,384; of Marden for Treasurer, 14,155; of Kimball for Auditor, 12,769; of Pillsbury for Attorney-General, 12,317. Members of the State Legislature were elected as follow: Senate—Republicans 24, Democrats 16; House—Republicans 149, Democrats 90, Prohibitionist 1. To the Executive Council, 6 Republicans and 1 Democrat were elected. The proposed amendment to the State Constitution abolishing the poll tax as a prerequisite for voting was adopted by a vote of 144,931 yeas to 53,554 nays; the amendment fixing the number of members necessary for a quorum in the Legislature was adopted by a vote of 152,688 yeas to 29,590 nays.

MEISSONIER, JEAN LOUIS ERNEST.

French painter of *genre* and historical subjects, born in Lyons, France, on Feb. 21, 1815, according to Vapereau (although the date has been given as 1811 by Meissonier's friend Jules Claretie, and as 1813 by other writers), died in Paris on Jan. 31, 1891. Meissonier was the fourth child of a *commissionnaire de marchandise*, and his childhood was cramped by extreme poverty. Throughout his life he was unwilling to speak of his earlier years. The evolution of his peculiar talent was a repetition of the familiar story of a natural gift demanding expression in the face of many obstacles. "When in school," says Vapereau, "he manifested a very lively

taste for painting, and obtained permission, not without much difficulty, to take lessons of a professor of drawing at Grenoble, M. Feriot." At the age of nineteen he went to Paris to devote himself to the study of art. "Well for him that he was born robust!" exclaimed Jules Claretie in after years. "But what is a struggle even in misery for a true-born artist? I have read some-



JEAN LOUIS ERNEST MEISSONIER.

where that in these dark days of his *début* Meissonier used to work side by side with Daubigny at the production of pictures for export at five francs a square metre. It is, perhaps, only a studio tradition. But it is a fact that Tony Johannot, to whom Meissonier exhibited his sketches at the time, gave him encouragement, and that Léon Cogniet opened his studio to him." Yet he remained only four months with Cogniet. Meissonier may fairly be accounted a born draughtsman, for his early training was hampered and imperfect.

It was impossible for Meissonier to maintain himself by painting alone in the first third of a century which in its last third witnessed millions offering scores of thousands of francs for his works. He resorted to illustration, the frequent resource of youthful painters, not because he loved illustration the more, but because it was necessary to live. In this field also he met constant rebuffs. Once he went timidly to the Rue St. Jacques and offered an editor four sepia drawings which he hoped might be used for the illustration of a fairy tale. It is to the editor's credit that he saw merit in the work, but the merit was not deemed sufficient to counterbalance the expense of engraving the drawings, and he bowed the heart-sick young artist out. There is another story of a publisher who was accustomed to keep Meissonier waiting in an ante-room where paper and pencils lay upon a table, placed as a decoy for the artist, who almost unconsciously began to make sketches which became the booty of the publisher on his departure. Meissonier's earliest illustrative work is considered to be five woodcuts representing humorous and pathetic

scenes in the life of "The Old Bachelor." About the same time he drew three designs for the "Bible of the Sieur Raymond," published in 1835. For the "Discourse on Universal History," also published by Curmer, he drew the figures of Isaiah, St. Paul, and Charlemagne, and many head and tail pieces and ornamental letters. He illustrated a new edition of Laumartine's "Chute d'un Ange," but this was before the appearance of Laroignat, and the blocks of Meissonier's earliest works, sent to England to be engraved, are said by M. Barty to have been "massured." He furnished two designs for an edition of "Orlando Furioso," 43 for a "Paul and Virginia," and 86 designs reproduced in wood, with one on steel, for the "Chaumière Indienne," issued by M. Curmer in 1838. Meissonier's work in the latter volume includes landscapes, plants, and foliage, and ornamental letters as well as figures. A vignette landscape, "The Valley of the Tomb," won especial praise for Meissonier from his fellow-artists. To M. Curmer's official account of the removal of the remains of Napoleon I from St. Helena to Paris Meissonier contributed two illustrations, the "Entrance into Havre" and "The Quays at Rouen." This was in 1840. From 1841-43 Meissonier regularly contributed designs, figure drawings, head and tail pieces, and ornamental letters to M. Curmer's serial publication "Les Français peints par eux-mêmes." Two children's books published in 1845 were illustrated by Meissonier, and he executed 10 drawings, engraved on wood, for "Lazarello de Tormes." He also furnished some compositions for the "Comédie Humaine" of Balzac.

In after years Meissonier's work as an illustrator was almost forgotten until biographers and collectors began to attach to it an importance due in their eyes to his swelling fame as a painter. Yet this work has a marked value in itself, and it is of significance because it embodies an influence upon his art. In drawing on the block for the wood engraver he was compelled to furnish most careful execution and draughtsmanship most accurate in details. Of necessity his subjects were rendered in miniature. The books which he illustrated and the old-time costumes which he studied undoubtedly exercised some influence upon the choice of subjects for his paintings.

His work as an illustrator antedated but a little his *début* as a painter. Of "The Visitors," owned by Sir Richard Wallace, Meissonier wrote: "My first picture, exhibited in 1833 or 1834, bought for a hundred francs by the Society of the Friends of Art at Paris, and adjudged to M. Poturle, who has always kept it. After his death it was bought by Sir Richard Wallace." The picture represents an old gentleman receiving two visitors, all in the costume of James I of England, and is said to be remarkable, not so much for the detail, as for the Rembrandtesque management of lights. In 1836 Meissonier exhibited "The Chess Players" and "The Little Messenger," which, according to Theophile Gautier, "attracted at once a crowd of admirers, and in which the artist struck his true line as the conscientious and skillful painter of miniature subjects." This was a new departure in the French art of that day. Like his first work,

these two pictures were sold for only 100 francs apiece, but by them the artist scored a hit. He followed it up with pictures of smokers, readers, chess players, and sentinels. Says one writer: "His earlier style, and, as some think, his best, was a frank study of character and costume for its own sake. He painted pictures without any thought of a motive, for nothing but the delight of representing simple subjects with sincerity and force. The figures that then sat to his imagination were toppers, chess players, serenading cavaliers, bibliophiles ensconced in snug corners of seventeenth-century libraries, and so on." Much attention was bestowed upon Meissonier's pictures in the Salon of 1830. These were "The Doctor" and "The Monk at the Bedside," both considered to have been inspired by "Paul and Virginia," which the artist was then illustrating, and both "remarkable for the expression of an intensity of sympathy which has subsequently disappeared from Meissonier's works." Of the same date is the first "Smoker," and a little later "A Beer Drinker." In the Salons of the next ten years Meissonier was represented by a similar class of studies. "The Reader" of 1840 is one of the more famous. "The Skittle Players" ("La Partie des Boules"), exhibited in 1849, is counted as one of the artist's masterpieces. His fame was already established. The third medal awarded him in 1840 was followed by a second medal in 1841, first medal in 1843 and 1848, and the cross of the Legion of Honor in 1846. He had become a shining mark for the critics of the old school, who accused him of always "contemplating nature through the small end of a telescope," and of studying "stuffs, gilding, interiors, and a still life to which living nature is only an accessory." But Meissonier had already gained a large popular following.

In the famous Salon of 1853, which contained Delacroix's "Pilgrims of Emmaus" and Rosa Bonheur's "Horse Fair," Meissonier, among other pictures, exhibited the well-known example "The Bravos" and a panel painting of a subject from the "Decameron," noteworthy from the circumstance, rare in Meissonier's works, of its presenting several female figures. "An Incident of Civil War," dated 1852, and "Moreau and Dessoles before Hohenlinden," dated 1853, were among the artist's first military subjects of importance. At the Universal Exhibition of 1855, where he received the "grand medal," Meissonier was represented by four panel paintings, small, of course, but up to that time his masterpieces. They were "La Rixe" ("The Tavern Brawl," familiar through colored prints), "Les Bravos," "La Lecture chez Diderot," and "The Skittle Players." One writer has said that Meissonier painted the "Diderot" to confute the critics, who declared him equal only to studies, never to historic work; that he painted the "Portrait of the Sergeant," a subject in full out-of-door light, to answer those who said that he could only paint interiors; and that "La Rixe" was his reply to those who claimed he could never paint movement. The last picture was presented by Napoleon to the Prince Consort of England. Yet critics who had a right to be heard protested against the tendency personified by Meissonier. Said one: "The Exposition Universelle finds the new school of the Trivial

denying art, genius, inspiration, poesy, to hold to an impossible cult of reality."

At about this time Meissonier began to paint pictures a little larger in size, but his perfection of execution and finish remained unimpaired. In 1856 he was made an officer of the Legion of Honor. In 1857 his "Confidence," called by Gautier "a pearl and a marvel among pictures," and his "Amateur in a Studio" were first exhibited. The "Soldiers at Cards," painted in 1858, was sold by the artist for \$5,000, and sold in this city in 1876 for \$11,500. The Emperor Napoleon III began to bestow liberal commissions upon Meissonier, who visited Italy once or twice to secure sketches for "The Emperor at the Battle of Solferino," a picture long announced, but not exhibited until the Salon of 1864. This was the first of a series of eight pictures projected by the artist to illustrate the "Napoleonic cycle." In 1860 a remarkable loan exhibition of modern works was held in Paris, at which Meissonier was most favorably represented. In 1861 he was elected a member of the Academie des Beaux Arts, succeeding Peyol. M. Chesneau and other thoughtful writers began to analyze the success of Meissonier as more than a change in fashion—as a significant development in French civilization. In 1861 he exhibited the "Portrait of Madame T.," his first portrait of a lady. To the English International Exhibition of 1862 Meissonier contributed four pictures, unnoticed in Mr. Palgrave's introduction to the catalogue of the French school. In the same year the "Napoleon in the Campaign of France" was shown in Paris and "The Halt" was finished for the Duc de Morny. The Salon of 1864 contained the "Solferino" and "The Retreat of 1814." For the latter picture Meissonier had the coat worn by Napoleon I copied by a tailor "with a Chinese exactitude." He put the garment on himself, mounted a wooden horse in his studio, saddled like the Emperor's steed, and passed hours in studying his figure and the fall of the skirts in a mirror. At another time he moved his wooden horse to the housetop during a snow-storm, and while the flakes whitened his coat and the cold changed his face to a livid hue he patiently sketched the effects which he saw in the mirror before him. In his studio he had a miniature landscape made and strewn with white powder, representing snow, through which he drew models of tumbrils and heavy wagons, that he might study the furrows and the fall of the snow. In his work and in his painstaking capacity for the closest application and study Meissonier was indefatigable. The jurors at the Salon of 1864 refused to award the "grand medal" to the painter of those remarkable pictures, and were soundly rated by Edmond About and other critics. Probably the best known of Meissonier's works, certainly of his Napoleonic pictures, is the "1807," "a page of history, but unlike the '1814,' a page of triumph." Upon this painting the artist worked for fifteen years, and it remains, we believe, the largest of his works. He modeled all the horses in wax and every figure was drawn from life. This is the picture for which the late A. T. Stewart paid \$60,000. At the sale of the Stewart collection, in 1887, this picture was purchased by Judge Henry Hilton for \$66,-

000 and presented to the Metropolitan Museum of Art. In the last years of his life he painted a large water color of the same subject for an English print publisher. In 1866 Meissonier painted the "Marshal Saxe and Staff," sold for \$8,600 at a New York sale in 1876.

The year 1867 may be regarded as bringing the culmination of Meissonier's public triumphs. In that year the International Exhibition, held in Paris, included a magnificent fine-arts section, and all the art critics of Europe gathered for the fray. Meissonier were represented by 14 pictures. He received one of the eight grand prizes, and when the prizes was presented by the Emperor his "Battle of Solferino" formed the center of the "Art Trophy" erected in the space cleared for the ceremony. The same year he was made commander of the Legion of Honor. English critics at the exhibition spoke of Meissonier's "heartlessness" as compared with Édouard Frère or Israels. Said one: "Wonderfully minute are the works of Meissonier, and they convey a great number of facts in a very small compass. But, after all, what are these facts? What does he really tell us of the joys and sorrows, hopes and fears, loves and hates of human kind? Much as we admire him, does he ever touch our hearts?" But this exhibition showed clearly that Meissonier, although his position was unrecognized by many critics, had become the chief figure in French art. At the outbreak of the Franco-Prussian War Meissonier, who had been nominally attached to the Emperor's staff, was made colonel of foot regiment, and it is said, among other adventures, that he narrowly escaped being shut up in Metz with Bazaine. The exhibition of the Wallace collections in London in 1872 gave the English a better opportunity for making acquaintance with Meissonier, and at the Vienna Exhibition of 1873 the artist won fresh laurels. In 1877 he sent to the Salon a portrait of Dumas. He also painted a portrait of Mr. Vanderbilt, and one of Mrs. J. W. Mackay, whose dissatisfaction with her portrait gave rise to an acrimonious controversy. Out of this affair grew the Meissonier Exhibition of May, 1884, which was designed by the friends of the artist to be a "vindication." This exhibition contained 155 pictures, about one third of the artist's work, but it can not be said to have presented his peculiar talent in any new light. It afforded, however, a valuable opportunity, since for many years of his life Meissonier rarely exhibited in the Salon. His next conspicuous appearance before the public was in the controversy among French artists, which led to the establishment of a new or rival Salon in 1890? Meissonier was a leader among the seceders, and exhibited a picture called "Octobre, 1806." So far as his art was concerned, Meissonier's industry remained unabated to the close of his life, but his execution grew harder and more constrained, and his coloring more harsh and metallic in quality.

Meissonier's etchings are not numerous. The more important are: "La Sainte Table," "L'Adresse du luthier Vuillaume," "Le Petit Fumeur," "Le Vieux Fumeur," "Les Apprêts du Duel," "Les Pêcheurs," "Il Signor Annebale," "Les Reitres," "Le Sergent," and "M. Polichinelle." He used an extremely fine point in his

etching, but his eulogists consider that the minuteness of his detail is lost sight of in a general "largeness of effect."

At death of Meissonier, which was followed by a pompous funeral, he left a widow, to whom he was married a few years before, and a son, Charles Meissonier, a painter of some talent, whose mother, Meissonier's first wife, was a sister of the artist Steinheil. Meissonier's career was rendered extraordinary by his isolated position in art, the perfection of his execution, the remarkable prices paid for his work, and the exalted place which he occupied in the popular estimation. For nearly two generations this "painter of the infinitely little" ruled the kingdom of Lilliput alone. He was imitated by artists like Plassan, Chavet, Fichel, and Fichelet. He was approached only by Bague. Among artists of the past he was compared with the Dutch masters of the seventeenth century, with Terburg, Gerard Dow, Metz, and Mieris. So far as execution is concerned, his best work deserves much of the admiration which has been lavished upon it. His executive ability in his chosen field was something to wonder at. His finest achievements will always retain a real and a considerable value. That his was the highest art no one can claim seriously. It was the "how" rather than the "what" which interested him. The ideal, the sentimental, the moral, never found expression in his art. He remained unmoved by contemporary currents of thought and feeling, and a conception of humanity for humanity's sake was reflected in nothing which he did. He was a virtuoso among painters, or, to use another simile, a splendid mechanism. It is natural that there should have been some differences among his critics. His admirer Theophile Gautier claims for his work "the serious qualities of grand painting"; Menard wrote that "it is always the man rather than the accessories which plays the principal part in his pictures"; Edmond About pointed to his faultless drawing and the "dignity and elegance of his lilliputian personages"; and Chesneau emphasized Meissonier's study of the "expression of feeling, especially the refinements of the intellect." Much of this may be admitted without affecting the final judgment upon Meissonier's art. It is not enough to say, as one writer has said, that "Meissonier's pictures interest the mind like clockwork, . . . like any fine and successful exhibition of the mechanical talent." It is not an unfair summary which Hamerton made when he wrote: "Perfection in any kind of art is so rare that when we meet with it we are sure to take notice of it. . . . Meissonier is not a man of any grandeur or sublimity of genius, and he has apparently no tenderness, but his keen observation and ready, accurate hand have made him king of his own realm in art, and his work, I suppose, will never diminish in money value, because such work must always be excessively rare."

Of hardly less interest to the student of character is Meissonier's independence of the art as well as the actual life of his time. His boyhood was the old age of David, the leader of the classical school in which Ingres and Isabey were the foremost pupils. But Meissonier was no more infected with classicism than with romanticism

when Delacroix headed the romantic movement. Severe academic art as typified in Paul Delaroche never swerved him from his purpose. The influence of Constable and Bonington, which stimulated Theodore Rousseau, "the father of modern French landscape art," affected Meissonier not a whit. Before Turner's death Meissonier himself had become an influence in French art and a bone of contention for critics. He saw Millet, Corot, Dupré, and Diaz win slow recognition, and finally fame. His life-time stretched from the classicism of David to the impressionism of Claude Monet and Degas. His purposes, his methods, and to a great extent his subjects were the same at the end as at the beginning of his career.

In other respects also Meissonier was exceptional. No artist of this century received in his life-time such prices as have been paid to Meissonier or his agent for his works. For the "1807" he received \$60,000, and for the "Arrival at the Chateau," in the Vanderbilt gallery, \$40,000. His "1804," formerly in the Delahante collection, was re-sold by dealers to M. Chauchard, the owner of Millet's "Angelus," for a price reported to be \$100,000. Yet Meissonier was not a rich man, and it was an effort for him to maintain his two costly establishments in the Boulevard Malesherbes, and at Poissy. In both cases he was the architect, and at his country house he was the designer of even the furniture and the silver table service. Both places have been frequently described by newspaper correspondents, for whom this "artist of millionaires" has been a never ending-theme. In person, Meissonier was small, almost dwarfish, with bowed shoulders, long white hair, a flowing white beard, prominent, slightly hooked nose, and keen dark eyes.

The number of Meissonier's paintings owned in this country may be estimated at about 75. Among the owners are the Metropolitan Museum of Art, Mrs. William H. Vanderbilt, Cornelius Vanderbilt, Mrs. Paron Stevens, William W. Astor, J. D. Rockefeller, Jay Gould, D. O. Mills, Theodore Havemeyer, and Henry C. Gibson, of Philadelphia.

MELVILLE, HERMAN, an American romancer, born in New York city, Aug. 1, 1819; died there, Sept. 28, 1891. His great-grandfather, Allan Melville, emigrated to America from Scotland in 1748, and established himself as a merchant in Boston. Allan's son, Major Thomas Melville, was a member of the Boston "tea party." He was the last person in that city to retain the old-fashioned cocked hat and knee breeches, and in this way became the original of Dr. Holmes's poem, "The Last Leaf." His son Allan, father of Herman, was an importing merchant of New York, a gentleman of fine culture, and an extensive traveler. On his mother's side, Herman was descended from Gen. Peter Gansevoort, also of Revolutionary fame, and known as "the hero of Fort Stanwix." His father's early death compelled the lad, who had passed most of his boyhood at and near Albany, to seek his own fortune. His fondness for English composition was early noticed by his Albany instructor, Dr. Charles E. West, now of Brooklyn, N. Y. It was doubtless the stories of travel told by his father and a seafaring uncle which originally influenced Melville to follow the sea as a vocation, and to ship

for Liverpool as cabin boy in 1837. Returning, he devoted some time to teaching at Lansingburg, N. Y., and Pittsfield, Mass., and received at one period, as his records show, a salary of "six dollars a quarter and board." Not long afterward he was again seized with the roving spirit, induced this time, perhaps, by the reading of Dana's "Two Years before the Mast," which appeared in 1840. On Jan. 1, 1841, the whaler "Acushnet" sailed from New Bedford,



HERMAN MELVILLE.

bound for the Pacific sperm-fishery, and Melville began the voyage that was responsible for his chief romance. The "Acushnet" had cruised for eighteen months when it reached the island of Nukuheva, in the Marquesas group. To that island in the summer of 1842, being wearied with harsh fare and hard treatment, the young sailor escaped from the whaler, with a single companion, familiarly known as "Toby." The latter's real name was Richard T. Greene. The comrades entered the hostile Typee valley by mistake, but through a fortunate accident made friends with the gentle but man-devouring savages. Their sojourn in the "happy valley" is the basis of Melville's first book, "Typee," and it may justly be said that in romantic descriptions of the South Sea islanders, their surroundings, and their ways of life, this book has never been excelled. "Toby" mysteriously disappeared, to find Melville in New York some months after the appearance of the first edition of "Typee." Melville himself remained for four months in the valley, and was finally rescued from his friendly captivity by an Australian whaler after a fight on the island's beach between two factions of the natives. From Nukuheva he sailed to the Society Islands in this vessel, and thence to the Hawaiian group, remaining long enough at both places to take observations of the countries and their people. At Honolulu he joined the crew of the frigate "United States," then on its return voyage, and, after a sojourn at one of the Peruvian ports, reached Boston in the autumn of 1844, where he was discharged. The following months were passed at Lansingburg, in the writing of his first book, "Typee." About the time it was finished an old friendship between his father's family and that of the late Chief-Justice Lemuel Shaw, of Massachusetts, was renewed, and this led to his engagement with Justice Shaw's daughter. Their marriage followed on Aug. 4, 1847, in Boston. Mr. and Mrs. Mel-

ville resided in New York city until 1850, when they purchased a farm-house at Pittsfield, Mass. The house was situated so as to command an uninterrupted view of Greylock Mountain and the adjoining hills, and was named Arrow Head, from the numerous Indian antiquities found in the neighborhood. Here he remained for thirteen years, occupied with his writing and with managing his farm. He had many literary neighbors in the surrounding towns, but was more intimate with Hawthorne than with any others during the latter's residence at the "red cottage" in Lenox. While at Pittsfield he was induced to enter the lecture field, and from 1857 to 1860 he filled many engagements in lyceums, chiefly speaking of his adventures in the South Seas. He lectured in cities as widely apart as Montreal, Chicago, Baltimore, and San Francisco, visiting the last-named place in 1860, by the Isthmus route, for the benefit of his health. Besides this voyage, he journeyed to England and the Continent in 1849 and 1856, partly to superintend the publication of English editions of his works and partly for recreation. At Pittsfield, besides his own family, Mr. Melville's mother and sisters were with him. As his children grew up, he found it necessary to obtain for them better facilities for study than the village school afforded; and so, in the autumn of 1863, the household was broken up and he removed with his wife and children to the New York house that was afterward his home, No. 104 East 26th Street. In December, 1866, he was appointed by H. A. Smyth, a former traveling companion in Europe, a district officer in the New York Custom House. This place he held until 1885, preferring it to indoor clerical work, and then resigned when the duties became too arduous for his failing strength.

Melville from early manhood indulged deeply in philosophical studies. Hawthorne has described in the "English Note-Books" his fondness for discussing such matters. This habit grew as he advanced in years, until his conversation with friends became chiefly a philosophical monologue. He was also much interested in all matters relating to the fine arts, and devoted most of his leisure hours to the two subjects. A notable collection of etchings and engravings from the old masters was gradually made by him, those from Claude's paintings being a specialty. After he retired from the Custom House, his tall, stalwart figure could be seen almost daily tramping through the Fort George district or Central Park, his roving inclination leading him to obtain as much out-door life as possible. His evenings were spent at home with his books, his pictures and his family, and usually with them alone; for, in spite of the melodramatic declarations of various English gentlemen, Melville's seclusion in his later years, and in fact throughout his life, was a matter of personal choice. More and more, as he grew older, he avoided every action on his own part and on the part of his family that might tend to keep his name and writings before the public. A few friends felt at liberty to visit him; he himself sought no one. Various efforts were made by the New York literary colony to draw him from his retirement, but without success. It has been suggested that he might have accepted a magazine

editorship, but this is doubtful, as he could not bear business details or routine work of any sort. His brother Allan was a New York lawyer, and, until his death in 1872, managed Melville's affairs with ability, particularly the literary accounts. It was late in the year 1845 when Melville completed the manuscript of "Typee." At nearly the same time his brother, Gansevoort Melville, sailed for England as secretary of legation to Minister McLane, taking the manuscript with him. It was offered to John Murray, who at once accepted it, buying the book outright for England for a moderate sum. The same plan was followed a year later with "Omoo." The house of Murray wished to include both volumes in their "Colonial and Home Library," so the title "Typee" was omitted, and that book was first published in England as "Melville's Marquesas Islands." In the United States Wiley & Putnam, whose London agent had contracted for the work, brought it out simultaneously with the English edition in the spring of 1846. Both "Typee" and "Omoo" (1847) were immediate successes, and Melville gained an international reputation at an earlier date than James Russell Lowell, who was born in the same year. Harper & Brothers issued "Omoo" in the United States, and "Typee" was placed with them two years later. This firm published all of Melville's works except four, not including two privately printed booklets. "Mardi, and a Voyage Thither" (1849) was severely criticised in some quarters for certain "metaphysical and morbid meditations." "Redburn, his First Voyage" (1849), more favorably received, was partly based on Melville's own experiences on his trip to Liverpool. "White Jacket, or the World in a Man-of-War" (1850) of course repeated much of his life on board the frigate "United States." "Typee" and "White Jacket" are the most consistent of his books. With "Moby Dick, or the White Whale" (1851) he reached the top-most notch of his fame. It is perhaps the most graphic and truthful description of whaling life ever written, although it contains some of the objectionable characteristics of "Mardi." "Pierre, or the Ambiguities" (1852) was the signal for an outburst of hostile criticism. In the year following its publication the great Harper fire occurred, destroying the whole stock of Melville's books—although the plates were preserved—and keeping them out of print at a most unfortunate time. Thereafter Melville's star waned. "Israel Potter" (1855) and "The Confidence Man" (1857) detracted from his reputation; and "The Piazza Tales" (1856), while containing the powerful stories of "Benito Cereno" and "The Bell-Tower," was published in an unattractive form. "Battle-Pieces, and Aspects of the War" (1866) embraces some of the best lyrics inspired by the civil war, notably "Sheridan at Cedar Creek." "Clarel, a Poem and Pilgrimage to the Holy Land" (1876), is written in the author's most mystical style. At the beginning of his physical decline he wrote and privately circulated a little story entitled "John Marr, and other Sailors" (1888), to which a few poems were appended. This volume was dedicated to W. Clark Russell, a genial correspondence with whom cheered Melville's last years. Mr. Russell considers Melville

the first of "the poets of the deep," using the word "poet" in its general sense. A few months before his death Melville collected his remaining shorter poems in a similar book, "Timoleon, etc." (1891), which was dedicated to "My Countryman, Elihu Vedder." The causes of the decline in popularity of Melville's writings may be found chiefly in his own career. Had he confined himself closely to an amplification of the interesting materials first discovered by himself, after the manner of a later Californian romancer, he might have gone on indefinitely producing works of more than common respectability. But he was led by his inclination for philosophical speculation to commit grave literary errors, which destroyed his popularity with the reading public. Perhaps, also, having once recited the story of his adventures in a series of romances, he felt his inability to create new characters and situations in the same domain; and his subsequent efforts might be considered as vain seeking after new successes. With lessening fame his desire for retirement increased, until a generation of writers for the press grew up to whom the announcement of his death was the revelation of his previous existence.

METALLURGY. The relation between theory and practice in metallurgy, with special reference to the indebtedness of the practical man to the scientific investigator, formed the subject of the address of Prof. W. C. Roberts-Austen, as president of the chemical section of the British Association. Practical metallurgists, the author said, are too apt to think that improvements in their processes are mainly the result of their own experience and observation unaided by science. On the other hand, those who teach metallurgy often forget that for the present they have not only to give instruction in the method of conducting technical operations, but have truly to educate, by teaching the chemistry of high temperatures, at which ordinary reactions are modified or even reversed, while they have further to deal with many phenomena of much importance which can not as yet be traced to the action of elements in fixed atomic proportions, or in which the direct influence of the atom is only beginning to be recognized. Metallurgical chemistry is, in fact, a special branch of chemical science which does not come within the ordinary sphere of the academic teaching of chemistry. It is often urged that metallurgical practice depends upon the application of chemical principles which are well taught in every large center of instruction, but a long series of chemical reactions exist which are of vital importance to the metallurgist, though they are not set forth in any manual of chemistry or dealt with in courses of purely chemical literature. The author gave particular attention to the influence of allotropism on the qualities of metal, and showed that interest was centered to a large extent on the question whether metals can, like many metalloids, pass under the application of heat or mechanical stress from a normal state to an allotropic one, or whether metals may even exist in numerous allotropic states. Prof. Spring, of Liège, has given evidence that in cooling lead-tin alloys polymerization may take place after the alloys have solidified, and it seems to be ad-

mitted that the same cause underlies both polymerization and allotropy. The phenomenon of allotropy is dependent upon the number of the atoms in each molecule; but we are at present far from being able to say what degree of importance is to be attached to the relative distance between the atoms of a metal or to the "position of one and the same atom" in a metallic molecule, whether the metal be alloyed or free, and it must be admitted that in this respect organic chemistry is far in advance of metallurgic chemistry. It is probable that minute quantities of foreign matter, which profoundly modify the structure of masses of metal, also induce allotropic changes. In the case of the remarkable action of impurities on pure gold, the author has suggested that the modifications which are produced may have direct connection with the periodic law, and that the causes of the specific variations in the properties of iron and steel may be thus explained. The recent use of nickel-steel for armor plate and the advocacy of the use of copper-steel for certain purposes are the industrial justification of the author's views as to the influence of the atomic volume of an added element on the mechanical properties of iron, and it is remarkable that the two bodies silicon and aluminum, the properties of which in the free state are so different, should nevertheless when alloyed with iron affect it in the same way. Silicon and aluminum have almost the same atomic volume. The consequences of allotropic changes which result in alteration of structure are very great. The case of the tin regimental buttons which fell into a shapeless heap when exposed to the rigorous winter at St. Petersburg is well known. The recent discovery by Hopkinson of the changes in the density of nickel-steel (containing 22 per cent. of nickel) which are produced by cooling to -30° affords another instance. This variety of steel after being frozen is readily magnetizable, although it was not so before; but its density is reduced by no less than 2 per cent. by the exposure to the cold.

Iron and Steel.—The year 1890 is declared by Mr. John Birkinbine, President of the American Institute of Mining Engineers, memorable as placing the United States in the lead of the nations in the production of pig iron. The total production in that year in the several countries from which reports had been received was: United States, 9,202,703 gross tons; Great Britain, 7,904,214 gross tons; Germany, 4,563,025 metric tons; France, 1,970,160 metric tons; and Sweden, 781,958 metric tons. Of the other pig-iron-producing countries, Austria-Hungary, Belgium, Italy, Spain, Canada, and Russia, none have produced in any one year 1,000,000 gross tons. The production of the United States for 1890 exceeded that of Great Britain by 16 per cent., and that of other countries by much more. Among the factors named by the author as aiding in securing its very large output to the United States is the fact that 7 per cent. of the amount never took the form of pig iron, but was taken in ladle directly from the blast furnace to the converters. Another factor was the association of the blast furnace and the chemical laboratory; another, the study which the consumers have given to the character and qualities of the pig

iron they use. During the last thirty years the United States has increased its relative production from 1 ton of pig iron for every 32 inhabitants to 1 ton for every $7\frac{1}{2}$ inhabitants. The Middle States have advanced from 1 ton to every 11 inhabitants to 1 ton for every $2\frac{1}{2}$ inhabitants. In Pennsylvania, in 1860 1 ton was produced for every 5 inhabitants; in 1870, 1 ton for every $3\frac{1}{2}$; and in 1890, 1 ton for every $1\frac{1}{2}$ inhabitant. A marked increase is shown in the Southern States, which in 1860 produced 1 ton for every 99 inhabitants; in 1870, 1 ton for every 66 inhabitants; and in 1890, 1 ton for every 10 $\frac{1}{2}$ inhabitants. In the Western States the production in 1860 was 1 ton for every 70 inhabitants; in 1870, 1 ton for every $32\frac{1}{2}$ inhabitants; in 1880, 1 ton for every 24 inhabitants; and in 1890, 1 ton for every 12 $\frac{1}{2}$ inhabitants.

Mr. Berkeley, President of the English Institution of Civil Engineers, specifies as the most conspicuous difference between English and American practice in the production of iron, the output from one blast furnace. The largest production in Great Britain seems not to exceed 750 tons in the week, while in America it has reached 2,000 tons. It might be questioned whether this large output from a single furnace was not obtained at some sacrifice of economy in material used and of wear and tear of furnaces. The production of pig iron in the United States amounted to 10,000,000 tons, or 2,000,000 tons more than that of the United Kingdom. This amount was wholly used within the country, showing a larger quantity of iron used per head of the population (300 pounds) than in any other part of the world. In Great Britain, after deducting from its production the quantity exported, the production equaled only 250 pounds per head of the population.

Describing the results which had been obtained from a plant erected at the Hoerde works for the elimination of sulphur from pig iron, Herr J. Massenez claimed that a saving of lime and coal was realized and a certainty that no red-short charges were obtained in the treatment in the converter, while the pig iron passed to the converter at a suitable temperature. There was also the further advantage that it rendered the Bessemer works independent of the time at which the individual blast furnaces were tapped, as the pig iron required for the Bessemer process could be taken at any time from the desulphurizing plant. Sir I. Lowthian Bell said that their experiences at Barrow with the mixer showed that it obviated the difficulties arising from the very great variation in the composition of the pig iron, which necessarily affected all future operations. If they had too much silicon they had far too high a temperature in the converter, and if they had too little silicon they had far too low a temperature, and the consequence was a variation in the product which was a great inconvenience and a cause of great waste. Since they had applied the mixer they got really an average, and thus avoided the variation. Mr. J. B. Stead, of Middlesbrough, said that he had tried an interesting experiment in mixing ferro-manganese with sulphide of iron and smelting them together in a crucible, the results of which bore out the conclusions arrived at by the author of the paper.

The following are some of the conclusions reached by Dr. E. J. Ball from his studies of the effect of carbon on iron: 1. That in iron containing 0.1 per cent. of carbon the tenacity of the metal increases by hardening either in oil or in water, with the temperature at which the metal is quenched, with a view to hardening, a maximum tensile strength being reached at a temperature of about 1,300° C. This temperature once exceeded, however, the tenacity of the metal diminishes, although the extensibility increases. 2. By raising the percentage of carbon from 0.1 to 0.2 the maximum tenacity is attained not at 1,300° C., but at a much lower temperature—about 1,000°—below the melting point of iron oxide, which, moreover, was not present. 3. By further considerably increasing the percentage of carbon, this point of maximum tenacity apparently disappears, and the annealed metal has nearly as high a tensile strength as the same metal which has been quenched in oil from any temperature up to a bright-red heat. Beyond this temperature, or when quenched in water, the hardened metal became so hard and brittle that it could not be gripped by the jaws of the testing machine.

In an address before the Iron and Steel Institute Dr. Wedding said that the progress of the metallurgy of iron in Germany had been practicable only with the help of science. Chemistry, physics, and mechanics have furnished the foundations for successive improvements. Sometimes new processes or devices have been directly deduced from the results of scientific inquiry; sometimes it has been the function of science to seek the principles underlying practical improvements, and thus to render their further development possible. In the matter of testing the tendency now is, departing from former rules, not to draw conclusions from single results, perhaps of a purely accidental character, but to make observations systematically, in series, and upon as many samples as possible, for the elimination of accidental errors; and also to establish the most suitable methods of testing, so that even if errors be involved they need not vitiate comparisons when the same methods have been employed. This latter tendency may be asserted likewise for the special branch of analytical chemistry which deals with the ores and products of iron. Here also are reported not so much the invention of wholly new methods as the determination of the sources and limits of error which are and always will be involved in the different methods employed. In the laboratory of the Rothe Erde, near Aachen, there are made in a year, by 2 or 3 chemists and 6 or 7 assistants, 26,500 chemical determinations and 62,000 bending and tensile tests, so that about 90 chemical determinations must be made daily. Phosphorus can be determined in thirty minutes, carbon in thirty, manganese in one hundred, silicon in sixty, and sulphur (cadmium method) in thirty. Thus it has been made practicable to maintain a continuous control of the running of works, and even, for instance, to wait before tapping a heat in the open-hearth furnace until its sufficiently complete dephosphorization has been chemically ascertained. The microscopy of iron is constantly widening its field. The method of examination of carefully

ground sections, instead of the surfaces of fracture, has been increasingly employed. The aid of photography has been invoked to make the results obtained by single observers the property of all.

In a paper on "The Future Situs of the Principal Iron Production of the World," Mr. Edward Atkinson, having shown that while the world's demand for iron and steel is likely to continue, as it does now, to tax the capacity of all producing countries, the United States is the greatest consumer. The enormous increase in demand will require the utmost effort of production at every point where the raw materials can be assembled at reasonable cost, and where furnaces can be operated to advantage on either continent. Supremacy in production must go to the point where the facilities for working the mines are best and the cost of assembling the materials at the furnace is least. Such a point appears to exist in the southern Appalachian region, the northwestern strip of which, from Pennsylvania to Alabama, as described in a letter from Mr. George B. Cowlam, of Knoxville, Tenn., and Mr. Goldsmith B. West, of Jacksonville, Fla., is an unbroken coal field, 39,000 square miles in area, containing from 2 to 5 thick workable seams of excellent coal. A valley strip of nearly equal area extending along the southeastern side of this coal field is a broad belt of persistent and heavy seams of fossil-iron ores, which run a little more than 40 per cent. of metallic iron, rather high in silica and phosphorus, containing considerable lime, and well adapted to furnace work. The southeastern rim of the valley strip is another belt of hydrated ores, brown hematite or limonite, running upward of 50 per cent. of metallic iron of desirable qualities. The mountain strip southwest of this valley contains large beds of very high grade iron ores, mainly magnetite Bessemer ores. Seven distinct beds large enough to be worked have been traced in different parts of this strip. The topography of the region is favorable to its development by a system of cross lines. The report by Carroll D. Wright, Commissioner of Labor, shows that as between the Northern and Southern States a great difference in the cost of iron and coal exists in favor of the South, although it is partly compensated as to the ore by the comparatively higher percentage of iron in the Northern States. Tables giving the cost of a ton of pig iron in 7 establishments in the Northern States, 5 in the Southern States, and 1 in Great Britain, show it to be from \$13.97 to \$16.50 in the Northern States, from \$9.16 to \$10.61 in the Southern States, and \$10.21 in the British establishment. As between 2 establishments in the United States, 8 on the Continent of Europe, and 3 in Great Britain, the cost of producing a ton of steel rails is from \$24.79 to \$27.68 in the United States, \$18.71 to \$24.52 on the Continent, and \$18.58 to \$21.90 in Great Britain. While reasons are pointed out for which the cost of labor, after all the materials have been assembled, should be less relatively per ton of steel rails in the United States than on the Continent or in Great Britain, the actual results show a difference as against the United States of \$3.78 in favor of Great Britain and \$3.49 in favor of the Continent.

An invention for the manufacture of continuous sheets of malleable iron and steel direct from fluid metal was described by Sir Henry Bessemer at the annual meeting of the Iron and Steel Institute. The author's first experiments were made in 1856, and resulted in his being able to produce a thin sheet some 3 or 4 feet in length. The sheet had a clear surface, was nearly free from oxidation, and absolutely free from scale. It was as tough as any rolled-iron plate he had ever seen, and it left no doubt in his mind of the entire success of this system of rolling thin sheets direct from molten metal. The invention was patented, but did not find favor with manufacturers. Since then the author had made improvements by which he proposed to remedy its defects, and it now became a question which was the least costly mode of dealing with a ladleful of fluid steel—forming it into massive ingots in molds or making it into thin sheets in the manner proposed?

In a paper at the Iron and Steel Institute on "Illustrations of Progress in Materials for Ship-building and Engineering at the Royal Naval Exhibition," Mr. W. H. White referred specially to the specimens of bending, stamping, flanging, and welding as showing the relative behavior of mild steel and iron under the shock of powerful explosives, and as serving also as a useful reminder of the enormous advantages and great economies which had resulted from the substitution of mild steel for iron in structures made up of plates and stiffening bars. Allusion was made to the increased sizes of plates now supplied in steel, and it was said that the difficulties experienced in welding mild steel have practically disappeared. The exhibits of forged steel and cast steel were described, and the ram-stem castings in war ships were especially referred to. When these were made in forged iron, the rabbits to receive the armor plating, shell plating, etc., the special forms required for the spur, and the arrangements for attaching decks, breast-hooks, etc., all had to be obtained by costly machine work, often involving months of almost continuous labor, after the forging had come out of the shop completed as far as the hammer could do the work. Under these conditions it was not unusual to see the central portions of war ships far advanced, while work at the bow and stern were untouched because of the want of stems and stern posts. Now, thanks to the use of steel castings, no such delay was necessary.

A new method of testing the hardness of iron and steel during manufacture has been devised by A. C. Caspersson, of Forsbacka Iron Works, Margretshill, Sweden, who conducts a current of electricity through a test piece of iron or steel allowing the current to melt the metal; upon which the strength of the current required in the operation is compared with the strength of current required for the fusion of a standard piece of metal of determined degree of hardness.

Part of Sir Frederick Abel's address at the opening meeting of the Iron and Steel Institute was devoted to the self-destruction, if that term may be used, of steel projectiles by the development of cracks. Steel projectiles may be received from the manufacturer to all appearance sound, yet after a time cracks will develop themselves. In extreme cases the occurrence has been so sud-

den that a violent rupture, attended by a sharp report, has taken place. The cause doubtless is the surface treatment to which the shot is subjected in order to get the requisite hardness, which leads to internal strains being set up. In one case mentioned, the head of the projectile had been thrown to a distance of many feet by the violent spontaneous rupture of the metal. The importance of rest in bringing about a diminution, if not a disappearance, of internal strains in masses of metal is illustrated by the behavior of chrome-steel projectiles which had to be stored for several months before their transportation to a distance could be ventured upon. The tendency to the development of cracks in tempered steel dies was discussed in a letter written to the speaker by Thomas Graham, when master of the mint, who said it was considered that if such dies were kept in store for a year or two, they became less apt to crack when in use, and coined more pieces than dies newly tempered. The same phenomena had to be considered in the manufacture of steel ordnance, a fact which enforces the objections of those who are opposed to oil-hardening the parts of a steel gun, the development by which of minute fissures or cracks in the metal was also referred to by the speaker.

Describing a new automatic hydraulic forging press that had been erected in Manchester, Mr. W. D. Allen, in the Iron and Steel Institute, said that it was essential in the production of heavy forgings from cast ingots of mild steel, that the mass of metal should be operated on as nearly as possible throughout its entire thickness. When employing a steel hammer for this purpose, it had been found that the external surface of the ingot absorbed a large proportion of the sudden impact of the blow, and that a comparatively small effect only was produced on the central portion of the ingot, because of the resistance offered by the *vis inertia* of the mass to the rapid motion of the falling hammer—a disadvantage that was entirely overcome by the slow, though powerful, compression of the hydraulic forging press, which seemed destined to supersede the steam hammer for the production of massive steel forgings.

In the process invented by Capt. G. Feodosieff, of St. Petersburg, for tempering steel, glycerin is employed for hardening, tempering, or annealing steels, cast steel, or cast iron. The specific gravity of the glycerin is graduated, according to the composition of the steel and the effect desired, by adding water. The quantity of glycerin is from one to six times greater in weight than the pieces to be plunged into it, and its temperature is varied, according to the hardness of the metal, from 15° to 200° C., a higher temperature being employed for tempering the hardened steels, while a lower temperature is used for tempering the milder steels.

The investigations by M. H. Le Chatelier of the influence of hardening on the electrical resistance of steel have been extended to a new series of metals and alloys. These metals, which show no molecular changes before fusing, have electrical resistances that vary directly with the temperature, plus a constant. Copper, silver, and their alloys have almost an identical coefficient for temperature, while the coefficient for

platinum and its alloys is three times as great. When heated in oxygen, the curve of electric resistance for silver remained straight, its mechanical properties were not changed, and its melting point was found to be $1,733^{\circ}\text{C}$. When heated with hydrogen its properties were changed from the temperature of $1,200^{\circ}\text{C}$.; its resistance increased more rapidly than when in oxygen, the metal after cooling showed great loss of strength, and the melting point was lowered to $1,680^{\circ}\text{C}$. The metal takes on a dull appearance similar to that of palladium, obtained by deposition from its hydrate. These facts prove that silver at a red heat occludes hydrogen. A large number of metals show, like iron, sudden molecular changes, which occur at well-defined temperatures. The electrical resistances then show at those temperatures sudden variations in their law of increase, but the absolute value does not change on passing a point where those changes occur, as is the case on passing the melting point. Molecular changes occur in zinc at 680°C .; in brass, with 38 per cent. of zinc, at $1,330^{\circ}\text{C}$.; and with an alloy of copper, iron, and nickel at $1,270^{\circ}\text{C}$. In brass the molecular change is accompanied by a considerable absorption of latent heat. Some alloys show progressive molecular changes which call to mind those observable in the chemical equilibrium of saline solutions. The presence of small quantities of foreign matter seems to hinder the transformation and the amount of the change seems to vary considerably with different specimens. At temperatures above those of transformation, iron, nickel, and their alloys exhibit a law of change for the electrical resistance which is similar to that of platinum and its alloys, while at lower temperatures the law of change is infinitely more rapid.

By means of the acoustic method which he has invented, M. Mercadier finds that steel containing nickel in the proportion of 25 to 100 is homogeneous and nearly isotropic. The incorporation of the nickel with the steel in sufficient quantity, he adds, while increasing the homogeneity of the metal, imparts to it an isotropy similar to that of the *belles glaces* of Saint-Gobain.

Aluminum.—According to a paper by Dr. Lindeck, of Darmstadt, aluminum is preferable to silver on account of its lightness and its non-discolorative quality. It is, however, effected by alkalis and even by soap; it can not, therefore, be used in the manufacture of household utensils. As an adjunct for the production of castings free from blow-holes, for use in the manufacture of the lighter parts of instruments, for the manufacture of tubes and wires, etc., it is adapted in a remarkable degree. As an alloy it is also very useful; and it meets with great favor in the fine arts; but no method of soldering the metal has yet been invented. Herr von Vogtlander, in the discussion of the paper, referred to the difficulties experienced in the employment of the metal as a greater drawback to its general use than the question of price.

Graham's method of obtaining aluminum is based upon the reduction by sodium of fluoride of aluminum, produced by the action of sulphate of alumina upon fluor-spar and cryolite; but the latter mineral is employed only at the

beginning of the operation, after which it is reproduced in large quantity in an artificial form, as a consequence of the reduction of the fluoride of aluminum. Thus obtained, it is of higher purity than the natural mineral, which always contains spathic iron ore and quartz.

In the Hall process for preparing aluminum a mixture of alumina and some fluoride serving as a flux is submitted to the action of the electric current, the electrolyte being placed in vessels of iron lined with coke and having a capacity for from 80 to 130 kilogrammes of material. For obtaining pure aluminum the electrodes are made of carbon; for aluminum bronze, copper electrodes are used, which dissolve as the mineral is reduced.

Aluminum and its alloys can be smelted in a small way in ordinary fire-clay or iron crucibles without the metal thereby becoming brittle or acquiring silicon, provided no liquid method is employed and the smelting point is not too much exceeded. Large quantities of aluminum are smelted in a reverberatory furnace fed with wood or gas fuel. Owing to its high specific temperature, the metal requires much time for smelting, and likewise for cooling to the correct casting temperature.

A new aluminum flux, called *stephanite*, is composed of about 70 per cent. of alumina and emery. While not volatilizable, it gives off in the furnace its metallic gases or vapors, which unite with the fusible iron acting as a condensing agent, while all impurities go to the liquid slag and are drawn off in the usual manner. The tests of the action of this flux, made in June, at Messrs. H. Young & Co.'s foundry, Pimlico, gave the "inevitable conclusion" that Mr. Stephan's method of incorporating aluminum with iron is a practical success, producing a metal combining the qualities of iron and steel.

One of the new applications of aluminum is to the refining of other metals by the addition of small quantities of it. It is thus applied to the refining of iron, copper, and brass.

Gold and Silver.—Balling's method of using cadmium in assaying gold bullion is regarded by Mr. Cabell Whitehead as inferior to the old method with silver; but with certain modifications it may be found rapid and satisfactory for a preliminary assay. The author has found cadmium an efficient aid in the estimation of small quantities of silver in gold bullion containing considerable amounts of copper or platinum. In his method the ore is covered with potassium cyanide, and heated till the cyanide is in quiet fusion. A suitable proportion of cadmium is then dropped into the crucible, where it quickly melts and forms a bright, homogeneous alloy with the gold. On cooling the contents on a porcelain slab, the alloy will be found in one piece, and is easily detached from the potassium cyanide. It is then washed in warm water, dried, and placed in a mortar, where several sharp blows with a hammer quickly reduce it to powder, which is assayed.

The improved furnace of the Fulton Iron Works, San Francisco, for melting bullion is operated on the principle of an ordinary forge. The pan constituting the bottom of the furnace is filled with a mixture of bone ash and fire-clay, thoroughly tamped down and then scooped out,

so as to leave a lining of the mixture about two inches thick over the entire inner surface of the pan. On the top of this, and confined by a wrought-iron basket or grate, charcoal and bullion are placed. As the bullion melts, it percolates through the charcoal to the bottom of the pan, and as it accumulates there it is, to a certain extent, refined by the absorption of the base by the bone and ash lining. The melted bullion is drawn off directly into molds. The succeeding bars can be melted and poured at intervals of about fifteen minutes each.

A gold-saving apparatus patented by Mr. John H. Hobart comprises a novel arrangement of amalgamating plates or copper plates, intended more particularly for saving float gold, but adapted for ordinary gold saving. The arrangement is such that barriers or impediments are formed in the course of the pulp, so as to cause a whirling or eddying of the flowing material very advantageous for the catching of the precious particles.

In the process of J. Buchanan, of Glasgow, for precipitating gold and silver from the liquid in which they are dissolved, in the process of extracting the same by chlorine, bromine, and iodine the liquid is allowed to percolate through iron or steel borings at the ordinary or at an elevated temperature. The gold and silver are claimed to be thus completely deposited on the iron, from which they may afterward be removed by riddling and washing, or otherwise. Copper, brass, zinc, or any other metal or alloy capable of precipitating gold and silver under the conditions, may be used instead of iron, together with charcoal.

In J. Edlington Chaster's process for extracting gold from refractory ores, the pulverized quartz or ore is fed direct from the stamps into the hopper of the machine; thence it passes by gravity into mercury kept bright by a weak current of electricity.

In the Moebius electrolytic parting apparatus, as operated at the works of the Pinos Altos Company, Chihuahua, the *doré* bullion, which varies in fineness from '800 to '900 in silver, and 25 to 50 in gold, is cast into thin plates. The plates are hung in the cell and subjected to the action of a current of small electro-motive force. The silver passes into the solution (nitrate of copper and nitrate of silver acidulated with nitric acid) from the anodes, and is precipitated as heavy needles and tree-like crystals at the cathodes. The copper from the anodes is also dissolved, but remains in solution provided the exciting liquid is sufficiently acidulated or carries enough nitrate of silver. All the lead (as peroxide), the platinum metals, antimony, and other impurities remain with the gold in the bag surrounding the anodes. The process is also employed at one or two works in the United States.

The inventor, Mr. Molesworth, claims for the Molesworth process for extracting gold from pyrites or other refractory matrices that it will save from 90 to 95 per cent. of the gold contained in pyrites, at a cost of about 4s. per ton of crushed ore. The process consists in calcining the crushed ore or pyrites in a cylinder which is kept slowly revolving in a furnace where only a moderate heat is required, and exposing it

during the process to a gas compound of oxygen and nitrogen. By this the ore is heated to a white heat, and is desulphurized. The gold is then ready to be amalgamated, or is treated with a bath of *agua regia*.

In the method of William West for treating complex sulphide ores carrying silver, the ore having been crushed to suitable dimensions, a sufficient amount of pyrites is added to reduce the zinc, if it exceeds that amount, to 21 per cent.; the charge is roasted till most of the sulphur is driven off, and is then drawn, and when cool is moistened with water. In this condition it is placed upon a layer of pebbles in a false-bottomed tank. The sulphurous-acid fumes from the furnaces, having been cooled, are forced into the tank, and with them a jet of steam at low pressure is admitted to facilitate chemical action. The result is the conversion of the zinc oxide to zinc sulphite, which rapidly changes to sulphate. The operation is usually repeated for the oxidation of all the zinc. The ore is leached with water in other vats, and, the zinc having been thus removed, the residue, containing the lead and precious metals, is dried on an iron floor heated by the hot sulphurous-acid fumes from the muffles, after which it is ready for the lead smelters.

Crude silver is refined at Lautenthal according to Roessler's method by treating it in graphite crucibles with powdered quartz and silver sulphate. The process occasions less than the ordinary loss of silver, and purifies it almost completely from bismuth. The slag consists mainly of silicates, and is sold according to the percentage of silver and bismuth.

Copper and Tin.—Experiments are described by Mr. Percy C. Gilchrist, which he has been making with the object of obtaining similar advantages in copper smelting to those which resulted from the replacement of the ordinary siliceous linings of steel-melting furnaces by a lining composed of basic material, or the Gilchrist basic process. Improved results were sought in the direction of lessened oxidation and consequently increased yield. The removal of arsenic was accompanied by an increased yield of "blister," and advantages were gained in the greater durability of the furnace bottom; and a considerable gain in output was obtained in the treatment of white or "pimple" metal. Analyses of various samples showed no practical difference between the refined copper produced from the basic blister and that produced from acid blister when an acid-lined refinery is used. When making ordinary tough cake, however, it is doubtful whether the extra cost of the initial basic lining and of the current repairs is compensated by the slight increase in the yield, but the saving in making "best-selected" copper from ordinary arsenical blister is considerable.

An important department in electro-metallurgy has been made by Messrs. Elmore, of Leeds, England, in their process for the manufacture of tubes and articles of a similar character by the electrical deposition of copper. The process for the electrical deposition of copper on a large scale for the purpose of producing pure copper was introduced several years ago, and is extensively used. By the old processes the copper so produced is again cast and used where articles of

high quality and for special purposes are required. The discovery of Messrs. Elmore is the automatic production of finished articles direct during the process of electro-deposition. The distinguishing features of this process are the purely automatic character of the working, the apparently low cost of production, and the greatly improved character of the finished product. One element of its value lies in the fact that the tubes produced by it are seamless, of a true circular section of uniform thickness, and homogeneous, and that they can be produced practically in any length and of any diameter.

The solvent action of acid ferric salts is utilized in Herr B. Schultze's process¹ for recovering tin from tin-plate scrap. The process includes three principal operations—the solution of the tin, its precipitation, and the treatment of the waste liquor. When acid ferric sulphate is used, the tin-plate cuttings are placed in iron baskets and lowered into the solution contained in an open wooden vat. The tin covering is stripped off the iron in a few hours. A similar procedure is taken when an acid stannic solution is used. The precipitation of the tin from the neutral stannous solution is effected by running it into vats containing clean metallic iron. The reaction is slow, but the reduction is complete. The precipitate, when washed and cleaned from iron, is either melted or used for making tin salts. The green vitriol liquors from the precipitating vats are concentrated by allowing them to drop slowly over a large heap of cleaned iron scrap, which causes a rapid evaporation and a deposit of ferrous sulphate on the metal. This may be washed off and purified as commercial copperas by recrystallizing, or it may be used for forming the acid liquor for dissolving fresh quantities of tin.

In the analysis of tin ores, Dr. J. S. C. Willis has found nascent hydrogen the most convenient reagent for obtaining tin in the metallic state.

Alloys.—In a long series of investigations, W. Spring has shown that alloys may be formed at the ordinary temperature, provided that minute particles of the constituent elements are submitted to great pressure. W. Hallock has recently given strong evidence in favor of the view that an alloy can be produced from its constituent metals with but slight pressure, if the temperature to which the mass is submitted be above the melting point of the alloy, even though it be far below the melting point of the more easily fusible constituent. A further instance is thus afforded of the fact that a variation of either temperature or pressure will effect the union of solids.

One thing, says Mr. F. Lynwood Garrison, in his review of the subject, must not be overlooked in considering alloys of steel—that, whereas frequently admirable results are obtained, in some respects the material is practically worthless on account of its unworkability in the ordinary operations of the machine shop. This is illustrated in some of the grades of manganese steel. One of the most serious disadvantages connected with the use of mild steel for ship-building purposes is its greater liability to corrode in salt water than iron. In several of the new steel alloys, more particularly in nickel-steel, this defect is overcome. Some of these alloys seem to be particularly well adapted for rivets—a fact the im-

portance of which can not be overestimated when we consider that the limit of strength of steel suited for ship-building, boilers, and other riveted structures is not so much determined by the quality of the steel that may be used as by the quality of the rivet steel used in combining plates of high tensile strength.

Of aluminum, Mr. Garrison believes that while for some special purposes it may be employed in the manufacture of iron, this use can not, with our present knowledge of its properties, be large. It might, however, be larger if the material was less expensive. Of chrome steel, the status is, on the whole, not satisfactory. Other steel alloys coming into use are so much better that it seems only to be a question of time when it will drop out. Copper acts much like sulphur in rendering steel more or less red-short and destroying its welding power. Copper-steel alloys are almost too new to determine for what particular purposes they would be most useful. It is claimed in the Schneider patents that they are useful for making ordnance, armor plate, rifle barrels and projectiles, and also girders for building purposes and ship plates. In view of the remarkable elastic limit of copper-steel, while it maintains at the same time a considerable elongation, its use may become very extensive in the arts. It has the advantage over aluminum, nickel, and tungsten steels of being cheaper to manufacture.

Regarding the properties of certain new alloys and their value in engineering applications, Mr. Garrison considers Tobin bronze, which is composed chiefly of zinc and copper, with small proportions of tin, iron, and lead, as practically a brass, or a *sterro* or *delta* metal with the addition of a small amount of lead, which tends to render copper softer and more ductile. According to the inventor's claims, it can be forged and stamped at a red heat as readily as steel. Bolts and nuts can be forged from it by hand or by machinery, when cold drawn. Its increased density and high-elastic limit, and the facility with which it can be upset while hot, adapt it for special purposes. In forging it, care should be taken to work it only at a cherry-red heat.

Three copper alloys containing phosphorus have gained a place in engineering work—phosphor-bronze, deoxidized bronze, and the Eureka tempered copper. The use of phosphor-bronze is the result of the discovery, by Messrs. Montefiore and Künzel, that, by adding small proportions of phosphorus or phosphuret of tin or copper to copper, the oxides of that metal, nearly always present as an impurity, were deoxidized to a greater or less extent, and the copper was much improved in strength and ductility; the grain of the fracture became firm, the color brighter, and a greater fluidity was attained. The results of comparative experiments with phosphor-bronze and other similar alloys indicate that copper wears nearly 50 per cent. faster than standard phosphor-bronze; that arsenic bronze containing no lead wears about 42 per cent. faster, but that containing 7 per cent. of lead wears 15 per cent. faster, while that containing the same amount of lead as phosphor-bronze wears only 1 per cent. faster; that Damascus bronze, containing as high as 12-50 per cent. of lead, wears from 7 to 8 per cent. slower; and that an experimental alloy containing less tin and more

lead than any of the other alloys experimented with wears 13.50 per cent. slower.

Deoxidized bronze—an alloy resembling phosphor-bronze somewhat in composition, and also delta metal, in that it contains zinc and iron—is found to have a tensile strength of 150,000 pounds per square inch against 70,000 pounds in copper wire, and its sheets a tensile strength of from 30,000 to 50,000 pounds per square inch.

The action of silicon on copper in silicon-bronze is similar to that of phosphorus, as a deoxidizer; while the silica formed is a valuable flux for any metallic oxides remaining unreduced. Wire made from this alloy is said to have the same resistance to rupture as phosphor-bronze wire, with a higher degree of electric conductivity, and, though very much lighter than ordinary wires, is of equal strength. The manufacture of silicon-bronze has greatly improved since its introduction. The latest kinds, with perhaps less conductivity, have a greater strength, which gives it particular efficiency when subjected to strains caused by accumulations of snow and ice.

It is claimed for the new alloy of copper, nickel, and manganese, called manganine, that its specific resistance is higher than that of nickel-eline, which has hitherto passed as the least resisting metal. Its resistance being affected in only a minute degree by high temperatures, it is adapted for the manufacture of measuring instruments and electrical apparatus in general, for which as little resistance as possible under different degrees of heat is required. Moreover, while the resistance of other metals is increased by raising the temperature, that of manganine is diminished.

A new alloy of gold and aluminum, containing 78 per cent. of gold, has been discovered by Prof. Roberts-Austen. It is described as the most brilliantly colored alloy yet known. It is bright purple, and by the reflection of light from one surface to another bright ruby tints are obtained. Of other alloys of gold and aluminum, 1 per cent. of aluminum gives the precious metal a green color, and the very hard and white alloy contains 10 per cent. of gold.

The following alloys have recently been invented: Nickel-aluminum, composed of 20 parts nickel and 8 parts aluminum, used for decorative threads; zinc-nickel, composed of 90 parts zinc and 10 parts nickel, used as a pigment; nickel-hardlead, composed of 100 parts type metal and 5 parts nickel, used for metallic types and for electros; platinumide, composed of 60 parts platinum, 35 parts nickel, 2 parts gold, and 3 parts iron, used for crucibles and chemical utensils; roseine, composed of 40 parts nickel, 10 parts silver, 30 parts aluminum, and 20 parts tin, for jewelers' work; sunbronze, composed of 60 parts cobalt, or 40 parts cobalt, 10 parts aluminum, 40 parts copper, or 30 parts copper; metalline, composed of 35 parts cobalt, 25 parts aluminum, 10 parts iron, and 30 parts copper.

Processes.—The Thies process of treating low-grade auriferous sulphides is, in brief, according to the inventor's account, the treatment of dead-roasted auriferous concentrates (pyrite, sometimes also chalcocopyrite, as at the Phoenix mine, Cabarrus Co., N. C.) with nascent chlorine, without artificial pressure or exhaust, in lead-lined iron cylinders; the throwing of the mass on a

sand filter, and the quick filtration and precipitation of the gold chloride with fresh and active ferrous sulphate. The gold is precipitated as metallic gold of a reddish-brown color, which, after being allowed to settle, is collected, washed, dried, and melted with soda and borax in graphite pots and cast into bars. The efficiency and economy of the process are such that in working on a large scale crude ore of the assay value of \$4 per ton, carrying about one third of its gold free and two thirds in sulphurets, can be profitably treated.

The method of working the Bernados electric welding process has hitherto been kept secret, but has recently been published. An ordinary lighting low-tension continuous-current dynamo is used, to the terminus of which a battery of accumulators is connected, and into this the current flows continuously. When the welding circuit is closed the current flows from the dynamo and accumulates through a large regulating resistance. One terminal of the system is connected by means of a flexible cable to a carbon pencil fixed in an insulated holder. This is held by the workman. The other terminal is connected to the table on which the work lies, or to the work itself. Thus the carbon pencil forms one pole and the work the other pole, and the electric arc is sprung between them. It is possible to obtain an arc for welding purposes six inches in length and having a sectional area of about two square inches. When iron or steel is under treatment, it is usual to make the carbon the negative pole and the iron or steel the positive pole; for other metals the poles are sometimes reversed.

The burning of zinc during melting may be prevented by covering the metal while in a crucible or ladle with a layer of common salt. Combustibility is impaired if a layer of charcoal is kept on top of the zinc, or of any other soft metal which can be melted in a ladle. The coating of oxide forms a protection against oxidation only to a certain degree, but the layer of charcoal tends to reduce the oxide again to its metallic form. Indeed, it is possible to recover lead, tin, zinc, and antimony from the dross or oxide which gathers in the ladle. It is only necessary to melt the oxide with charcoal, salt, and soda to get it again into useful shape. The dross, salt, charcoal, and soda should be powdered, mixed, and melted. The soda and salt melt into a pasty mass, and the carbon unites with the oxygen of the dross, leaving the metal free. The salt and soda simply act as flux in reducing the oxides.

A method of recovering acid from waste pickle has long been sought, without any satisfactory result having been obtained. A process devised by Mr. Thomas Turner appears to secure this object in a simple and economical manner. The plant consists of three parts, viz., a special combined roasting and evaporating furnace, adapted for carrying on continuous double distillation; a series of cooling and condensing pipes; and a condenser for collecting acid that would otherwise be lost. The waste liquor is allowed to run in a continuous stream into the furnace, and is there decomposed by the combined action of heat, air, and steam from the liquor itself into hydrochloric acid and oxide of iron. The latter remains in the furnace and is

raked from time to time, while the hydrochloric acid is condensed and is used over again in the galvanizing process. When the apparatus is once erected and in working order, it is only necessary to supply it with fuel in order to recover hydrochloric acid continually from waste pickle, and to remove the irregularities in the form of oxide of iron. The acid recovered is generally of the same strength as that originally used for pickling, and is suitable for use in galvanizing. The oxide of iron is used for filtering in the puddling process and for other purposes for which it is well adapted, and goes a long way toward paying for the fuel that is used.

The experiment of glazing a furnace lining was successfully tried at the Crown Point Iron Company's works, Lake Champlain, on the occasion of relining and starting in blast one of its large furnaces. After the fire-bricks were in place a cheap article of graphite or plumbago was reduced to a paste with water, and the interior of the furnace washed with it. The plumbago paste gave a slippery glaze to the fire-brick lining, which refused to be coated with slag, and the charge pressed down in less time and left the lining free and clear.

In the new method for producing steel free from sulphur and phosphorus proposed by the French Société Metallurgique du Midi, the pig iron is taken at the moment of fusion, and, some minutes before introducing it into the converter, very fine sand and a very small quantity of crystallized chromic acid are thrown into the bath. After introduction into the converter, as soon as eruption begins, finely divided carbonate of ammonia, inclosed in small balls of pure pig, is introduced into the bath. The product of the casting is a homogeneous iron or steel, free from metalloids.

The method of M. Bertrand, of Paris Grenelle, for producing magnetic oxide on iron consists essentially in depositing by galvanoplastic means a metal or a metallic alloy susceptible of volatilization at a temperature of about 1,000° C. After receiving this coating the articles are introduced into a furnace, where the metallic deposit is volatilized. The iron oxidizes, without receiving sufficient oxygen to form a sesquioxide, but enough to form the magnetic oxide.

Dr. W. Stahl's process for recovering cobalt from low-grade ores consists in roasting the powdered ore with salt and pyrites, whereby the cobalt and copper and manganese, if present, are converted into chlorides, while the iron is chloridized to a small extent only. After roasting, the ore is leached with water, and the solution is treated with sulphuretted hydrogen to remove the copper. From the filtrate cobalt is precipitated with sodium sulphide.

Miscellaneous.—With good reason, said Dr. Wedding, of Germany, in an address before the Iron and Steel Institute, may the invention of the Brothers Mannesmann in the manufacture of pipes be regarded as an important improvement. For pipes destined to meet severe requirements of resistance to interior pressure, it is indeed calculated to revolutionize previous practice. The process consists in feeding a solid, highly heated round bar of ingot metal between rolls which, while their axes are oblique to the axis of revolution, revolve in the same

direction. The metal of the surface of the bar thus acquires an increased motion in a spiral direction, and is drawn over its core, receiving, consequently, the form of a pipe. It is not practicable, without an excessive expenditure of power, to make the interior diameter of such a pipe very large. But it is sufficient that an interior space is created, for there is no difficulty in widening it over a mandril. Since in the operation the pipe moves spirally forward and all its parts are spirally pushed and pressed, the metal becomes still denser. It is this spiral arrangement of material which makes the Mannesmann pipes so remarkable, apart from the advantage they possess in presenting no lines of welding. Moreover, blow-holes are so squeezed out spirally as to make the walls of the pipe impermeable.

The importance of extending the use of the less-known metals is pointed out by Prof. W. C. Roberts-Austen. There will doubtless be in the immediate future, he says, a rapid increase in the number of metallurgical processes that depend on reactions which are set up by submitting chemical systems to electric stress. Sodium is growing in importance for cheapening the production of aluminum, and as a powerful weapon of research. The production of magnesium, which was a curiosity a few years ago, now constitutes a considerable industry. We may confidently expect to see calcium and barium produced on a large scale as soon as their utility has been demonstrated by research. Minerals containing molybdenum are not rare, and the metal could probably be produced as cheaply as tin if a use were to be found for it. The quantities of vanadium and thallium that are available are also far from inconsiderable; but we as yet know little of the action of any of these metals when alloyed with others which are in daily use. The field for investigation is vast indeed, for it must be remembered that valuable qualities may be conferred on a mass of metal by a very small quantity of another element. The useful qualities imparted to platinum by iridium are well known. A small quantity of tellurium obliterates the crystalline structure of bismuth, but we have lost an ancient art which enabled brittle antimony to be cast into useful vessels. Two tenths per cent. of zirconium increases the strength of gold enormously, while the same amount of bismuth reduces the tenacity to a very low point. Chromium, tungsten, cobalt, titanium, cadmium, zirconium, and lithium are already well known in the arts, and the valuable properties which metallic chromium and tungsten confer upon steel are already familiar; but as isolated metals we know little of them. A rich reward awaits the labors of chemists who will bring themselves to divert their attention, for even a brief period, from the investigation of organic compounds to raise alloys from the obscurity in which they are at present left.

In welding and metal working by electricity, two systems are in use; the incandescent system, in which the material operated upon is traversed by currents of large volume and low electro-motive force, the current having a continuous metallic circuit during the welding operation; and the arc system, in which the electric arc is utilized. A paper by Mr. A. B. Wood, in

the American Institute of Mining Engineers, calls attention to the arc system as one of the recent developments in the art of metal working. In it the material may be included in the electric circuit or may be wholly without it; in either instance the enormous heat of the electric arc is brought into requisition and utilized. In the Coffin arc-welding system the material is in the electric circuit or independent of it, as the case may require, different processes being applied as may be best suited to the work. The system seems destined more especially to give material aid in work on sheet metal, tubes, and boilers, since the tremendous heat of the arc can be applied where it is most needed. The heating of the material is not dependent upon its electrical resistance or its current-carrying capacity, and perfect contact at a joint is not a necessity, while these are points of the utmost importance in operating on such work under the incandescent system. The mechanical application is readily made.

METHODISTS. General Statistics.—The statistics of the world's Methodism, prepared by the special committee on statistics of the Ecumenical Conference, held in Washington in October, give the following numbers:

	Churches.	Ministers.	Members.
<i>American churches:</i>			
Methodist Episcopal.....	22,858	15,058	2,256,463
Methodist Episcopal, South.....	11,737	5,050	1,218,561
Methodist, Canada.....	3,092	1,819	241,376
African Methodist Episcopal.....	4,069	4,150	475,565
African Methodist Episcopal Zion.....	3,500	3,650	425,000
Colored Methodist Episcopal.....	3,196	1,800	180,824
Methodist Protestant.....	2,003	2,153	157,004
United Brethren in Christ.....	2,719	2,017	197,123
Union American Methodist Episcopal.....	50	112	3,500
African Union Methodist Protestant.....	50	56	5,990
Free Methodist.....	952	1,050	20,998
Congregational Methodist.....	50	50	5,525
Primitive Methodist.....	77	64	5,620
British Methodist Episcopal.....	.....	.....	.....
Independent Methodist.....	35	8	2,500
Evangelical Association.....	2,062	1,227	150,234
West Indian Methodist.....	279	101	58,575
British Wesleyan Conference Missions.....	22	19	5,226
United Methodist Free.....	29	8	3,755
Wesleyan Methodists.....	600	650	19,525
Total American.....	57,465	39,042	5,383,994
In Europe.....	15,584	4,488	915,986
In Asia.....	311	588	35,313
In Africa.....	571	865	77,234
In Australasia and Polynesia and South Sea missions.....	3,250	788	93,140
Total.....	77,181	45,271	6,505,667

I. Methodist Episcopal Church.—The "Methodist Year Book" for 1892 gives statistics of the annual conferences of this church for 1891, of which the following is a summary: Number of annual conferences, (including those in foreign mission fields), 131; of ministers (including those in full connection and on trial), 15,877; of local preachers, 14,202; of members and probationers, 2,385,916; of Sunday schools, 27,273, with 303,644 officers and teachers and 3,313,844 pupils; of churches, 23,350, valued at \$99,277,101; of parsonages, 8,749, valued at \$15,256,681. Amount of benevolent contributions: For the Missionary Society, \$1,228,888; for the Board of Church Extension, \$311,827; for the Freedmen's Aid

and Southern Education Society, \$322,656; for the Sunday School Union, \$26,138; for the Tract Society, \$23,863; for the Board of Education (including all sources of revenue), \$75,440; for the American Bible Society, \$37,317; for the Woman's Foreign Missionary Society, \$263,660; for the Woman's Home Missionary Society, \$155,398.

Board of Education.—The total receipts of the Board of Education for 1891 were \$74,577. The board has investments to the amount of \$226,000. One thousand and sixty-nine students—909 young men and 160 young women, all but 60 of whom were intending to become ministers, missionaries, or teachers—were aided during the year by loans. The whole number aided since the organization of the board in 1868 was 3,818. The whole amount loaned was \$49,037. The educational institutions under the care of the Church consist of 15 theological institutions, 56 colleges and universities, 53 classical seminaries, 10 colleges and seminaries for young women, and 74 schools connected with foreign missions. These return in the aggregate 2,204 teachers, and 39,298 students, and \$22,780,436 of property and endowments free of debts.

A meeting of presidents of colleges connected with this Church was held at Cleveland, Ohio, Nov. 10, and discussed the subjects of "The Establishment and Classification of our Institutions of Learning," "The Methods of raising Funds for creating and endowing Institutions of Learning," "The Methods of raising and appropriating Funds for aiding Needy Students," and "Is there a Demand for Institutions devoted exclusively to Post-graduate Work?" A memorial was resolved upon asking the General Conference to take measures for fixing the minimum requirements for the bachelor's degree in colleges officially recognized. A permanent "College Association of the Methodist Episcopal Church" was organized, to which institutions requiring three years of special preparatory and four years of college work are eligible to representation in membership.

Church Extension.—The General Committee of Church Extension met in Columbus, Ohio, Nov. 5. The receipts of the board for the year from conference collections had been \$145,009; from other sources, on general account, \$48,779; making a total of \$193,788. For the Loan fund, to be added to the capital, \$52,876; from property, \$7; and from loans returned, \$65,155, or \$118,038 in all; making the total receipts \$311,826 and showing a net increase of \$12,540. The Loan fund had reached a cash capital of \$729,810, and property valued at \$22,608, or a total of \$752,418. Five hundred and ninety-three churches had been aided during the year, making the whole number aided from the beginning 7,937. Applications were on hand from 317 churches for \$143,625. The committee apportioned \$309,000 among the conferences to be raised for the ensuing year's work.

Freedman's Aid Society.—The income of this society for the year ending June 30, 1891, was \$322,656, or \$56,008 more than in the year preceding. The society sustains 10 collegiate institutions, 1 theological seminary, and 11 academic institutions among the colored people of the South and 3 collegiate and 16 academic

institutions among the white people; in all of which are returned 330 teachers and 9,310 pupils. The aggregate value of the property of these institutions is \$1,800,800.

Missionary Society.—The annual meeting of the General Missionary Committee was held in Cleveland, Ohio, beginning Nov. 11. The treasurer reported that the cash receipts of the society for the year ending Oct. 31 had been \$1,228,888, or \$93,616 over those of the previous year. Of the total amount, \$1,078,544 had come directly from the churches through the collections. The increase in contributions of this class was \$26,901. Besides the receipts already mentioned, \$22,169 had been obtained from various sources to meet contingent appropriations made by the board to respond to pressing demands in India. If this amount were added the total receipts would be swelled to \$1,256,056.

Appropriations were made for the ensuing year as follow: Foreign missions—Africa, \$5,400; South America, \$60,545; China, \$121,772; Germany, \$35,600; Switzerland, \$9,500; Scandinavia, \$48,170; India, \$123,729; Malaysia, \$9,000; Bulgaria, \$22,000; Italy, \$43,634; Mexico, \$59,000; Japan, \$66,000; Corea, \$17,562; Lower California, \$1,000; total for foreign missions, \$622,912. Domestic missions—Welsh, \$2,250; Scandinavian, \$57,950; German, \$50,250; French, \$7,275; Spanish, \$14,000; Chinese, \$11,400; Japanese, \$7,000; Bohemian and Hungarian, \$7,350; Italian, \$4,750; Portuguese, \$800; American Indian, \$9,350; English-speaking, \$327,625. Miscellaneous appropriations, \$102,455. Total of all the appropriations, \$1,225,367. Re-appropriated, \$8,000; contingent appropriations, \$42,167.

Woman's Foreign Missionary Society.—The receipts of this society for the year ending Oct. 1, 1891, were \$263,660, showing an advance of \$43,330 over the receipts of the preceding year. The society supports 120 missionaries, of whom 101 are in the foreign field, and 350 schools, with about 12,000 pupils. About 30,000 patients are treated annually by its physicians. Of the missionaries, 32 are in India, 27 in Japan, 23 in China, 8 in Mexico, 5 in South America, 2 in Italy, 1 in Bulgaria, and 3 in Corea. Twelve are medical missionaries.

Woman's Home Missionary Society.—The cash receipts of this society for the year ending in October, 1891, were \$155,398; estimated value of supplies distributed to frontier preachers and industrial homes, \$160,824. The society has in the South 12 model homes and industrial schools, 12 missionary teachers, 198 resident pupils, and more than 1,000 day pupils in industrial classes. In the Western States and Territories and among Mormons and Spanish Americans it has 16 industrial schools and 36 missionaries; in city missions, 26 missionaries and many helpers; in 8 deaconesses' houses, 54 deaconesses and nurses; making in all 143 missionaries.

II. Methodist Protestant Church.—The receipts of the Board of Foreign Missions for the year ending April 30 were \$14,573; amount of funds, \$2,500, balance in favor of the current fund, \$510. The foreign mission is in Japan, with stations at Nagoya and Yokohama.

The reports of the Woman's Board show a gradual increase of income in twelve years from

\$381 to \$4,000 in 1890; and the accounts of the Building fund show that \$7,930 have been raised for its purposes since it was instituted.

III. American Wesleyan Church.—The special commissioner of the United States census on the statistics of churches gives the following numbers for this denomination: Number of annual conferences, 22; of church organizations, 565; of church edifices and halls in which services are held, 554; seating capacity of churches and halls, 104,737; value of church property, \$393,250; number of members, 16,492.

The thirteenth quadrennial meeting of the General Conference was held in Grand Rapids, Mich., beginning Oct. 21. A report was made of the beginning of a mission during the quadrennial term in Western Soudan, Africa. The Missionary Society had received \$5,826, and had expended \$4,469. As the result of discussions concerning the articles on regeneration and sanctification, the Church was declared bound to the law on the subject as expressed prior to 1887, and no action in connection with it was regarded as legal since 1844. New articles on the subjects were proposed, conditionally approved, and ordered inserted in the Discipline, with a foot-note explaining that they were in process of adoption, and not to be regarded as legal unless approved by a two-thirds vote of the annual conferences. A section on temperance and prohibition was added to the Discipline. Arrangements were made for incorporating the Church.

IV. Methodist Church of Canada.—*Missions:* The domestic missions of this Church include 399 missions, with 342 missionaries, 73 assistants, and 38,109 members. The Indian, French, Chinese (in British Columbia), and foreign (in Japan) missions return 76 missions, 72 missionaries, 47 teachers, 15 interpreters, and 6,391 members, distributed as follow: Indian, 4,153; French, 254; Chinese, 165; Japanese, 1,819. The Board of Missions, at its annual meeting in October, appropriated \$236,366 for missionary works, of which \$100,073 are to be applied to domestic missions.

V. Wesleyan Methodist Church.—The following statistics of the Wesleyan Methodist Church of Great Britain for 1891 were given by the Rev. David J. Waller in his paper at the Ecumenical Conference on "The Status of Methodism in the Eastern Section":

COUNTRIES.	Ministers.	Lay preachers.	Members.
England.....	2,018	16,088	486,950
Wales.....	641	10,792	118,437
Ireland.....	233	.....	25,652
France.....	32	90	1,461
Total.....	2,924	26,860	627,500

In Australasia, where an affiliated general conference has been organized, there are 593 ministers, 4,636 lay preachers, and 73,310 church members, making the total for the Eastern Section of the Wesleyan Methodist Church 3,517 ministers, 31,496 lay preachers, and 700,810 members, together with 11,910 Sunday schools, including 151,716 teachers and 1,234,080 pupils.

Mr. Waller's tables also embraced statistics of other British Methodist churches, including the

Primitive Methodist Church, the United Methodist Free churches, the Bible Christian Church, the Methodist New Connection, the Wesleyan Reform Union, and the Independent Methodist churches. The totals for these are 1,900 ministers, 23,551 lay preachers, and 346,253 members, with 8,177 Sunday schools, including 113,200 teachers and 816,315 pupils.

Wesleyan Missionary Society.—The annual meeting of the Wesleyan Missionary Society was held in London, May 3. Alderman W. O. Quibell, of Newark, presided. The receipts for the year had been £122,072, and the expenditures £132,885, while the debt had risen to £19,377. The following general summary of the work of the society was given:

Missions under the immediate direction of the Wesleyan Missionary Committee and British Conference in Europe, India, China, West Africa, the Transvaal, British Honduras, and Bahamas:	
Central or principal stations, called circuits.....	363
Chapels and other preaching places in connection with the above-mentioned central or principal stations, as far as ascertained.....	1,572
Missionaries and assistant missionaries, including supernumeraries.....	338
Other paid agents, as catechists, interpreters, day-school teachers, etc.....	2,163
Unpaid agents, as local preachers, Sabbath-school teachers, etc.....	4,234
Full and accredited church members.....	34,722
On trial for church membership.....	5,250
Scholars attending either the Sabbath or day schools.....	65,503

The report of the Wesleyan home missions, May 4, spoke of the work of the great central missions as "surprisingly successful."

The income of the chapel fund for the year was £9,054. There had been 383 cases of erections and enlargements, at an outlay of £276,801, whereby 18,115 sittings had been added to the total church accommodation. The erections involved a sum of £198,903, to be raised by contributions, and the expenditure in new erections and reductions of debt had been £353,000.

The committee of the fund for the extension of Methodism in Great Britain had received 130 applications and had promised 106 grants and loans to the total amount of £6,196, of which it had paid £5,698. It had received since the foundation of the fund 1,913 applications, and had promised assistance in 1,366 cases to the amount of £98,332. Owing to the difficulty of securing the return of its loans, it would make no more at present. The fund was formed to promote the building of 1,000 chapels in the metropolis. This number had already been exceeded in erections and enlargements, but in many cases the new buildings had only superseded previously existing inadequate chapels. The committee gave many reasons why the fund should be continued and special reasons for present activity. The Committee on the London Mission reported an increase of 465 members.

Reports were received by the committee of the Sunday School Union of 6,992 schools, with 129,280 officers and teachers and 938,327 pupils.

Wesleyan Conference.—The one hundred and forty-eighth Conference met at Nottingham, July 21. The Rev. Dr. Thomas B. Stevenson was chosen president. A committee appointed by the previous Conference to ascertain whether any modification could be legally made in the Deed Poll, whereby the restriction of the pastoral time to three consecutive years in the same cir-

cuit could be removed, reported that it had consulted with competent counsel, who had found that no modifications appeared to be possible; that no court had power to change the Deed Poll; and that the only way of securing relief was by act of Parliament, to obtain which practical unanimity in the connection would be necessary. The existing special arrangements with regard to town missions appeared, however, not to be illegal. After a discussion of the question, the Conference resolved

That in view of the great and numerous advantages which would arise from an extension of the term of ministerial residence in a circuit, and also of the fact that eighteen districts have adopted minutes in favor of it, the Conference shall appoint a special committee to consider the desirability of securing by act of Parliament liberty of action for the Conference, and, secondly, to suggest an equitable and effective way of submitting the proposals to the judgment of the people. The special committee shall report its conclusions to both sessions of the next Conference.

A rule allowing the circuits to control a certain part of the contributions for home missions was rescinded, and the whole fund was ordered administered by the General Committee on the basis of a report sent up by the district meetings. The Conference decided, subject to approval by the district meetings, to abolish the yearly collection in the classes in behalf of home missions, and to substitute for it an assessment on the circuits. Approval was given to the work carried on within the Church in behalf of social purity, and the Social Purity Committee was authorized to represent the Conference at any general council of Christian Churches that might be held during the year in the interest of that cause, and especially to consider the relation of personal character to public life. The Temperance Committee was authorized to seek the establishment of White Cross associations in connection with Bands of Hope. A resolution was adopted expressing strong disapproval by the Conference of raising money for any Methodist purpose by any means in which the element of gambling is involved. The Conference deplored the widespread prevalence of betting and gambling which certain occurrences of the past year had brought into painful prominence, and expressed its sorrow that countenance had been given to those vices in high places, and that the newspapers stimulated them by devoting so much space to the publication of sporting items; entered a protest against their publication of such news, and suggested the need of legislation on the subject. For securing more full and distinct lay representation in the district meetings the circuits were authorized each to send, in addition to the circuit stewards, a freely elected representative to those meetings. The use of the term "church" was authorized in speaking informally of the societies and the connection. In formal documents the legal designation of societies has to be retained. It was ordered that henceforth an abstract of the accounts of the Book Room should be presented annually to the Conference.

West Indian Conference.—The West Indian Triennial General Conference met in its third session at Bridgetown, Barbados, March 16. The Rev. George Sargeant presided. The General Conference includes two annual conferences, the

Eastern and Western, the statistical returns from which are summarized as follow: Number of chapels, 279; of preaching places, 166; of ministers, 101; of local preachers, 458; of full members, 47,743; of members on trial, 2,576; of junior members, 8,256; of pupils in Sunday schools, 30,810; of day pupils, 28,916. These returns show an increase in six years, or since the meeting of the first General Conference, in 1885, of 4,453 members, 5,380 junior members, 6,489 pupils in Sunday schools, and 6,976 pupils in day schools. The work of higher education was provided for at York Castle and Barbican, Jamaica, Coke College and girls' high schools in Antigua and British Guiana, which were, in all, attended by 216 pupils. The sum of £60,460 had been raised, and £70,221 had been expended of chapel and other trust income, in six years; and 29 new chapels, 7 ministers' residences, and 4 school-houses had been built. Missions had been undertaken in Panama and St. Lucia. The subjects of the formation of an annuitant society, chapel and trust funds, and education were considered. On the last subject the Conference resolved, with especial reference to two cases where Government ordinances had been passed or were under consideration, that an acceptable scheme must comprise the establishment of a system of Government schools under the direction of a representative board, sufficiently tolerable and equitable to satisfy the reasonable claims and wishes of all parties, and allowing equal rights of visitation and religious instruction to the ministers of the several churches. Delegates were chosen to the Methodist Ecumenical Conference appointed to meet in the United States in October. The Rev. George Sykes was chosen to be president of the next General Conference.

VI. Primitive Methodist Connection.—The numerical reports made to the Conference in June, give the following footings: Number of church members, 192,652; of ministers, 1,043; of local preachers, 16,256; of class leaders, 10,408; of connectional chapels, 4,405; of other preaching places, 1,267; of hearers, 585,346; of Sunday schools, 4,118, with 60,833 teachers and 430,675 pupils; value of connectional property, £3,283,203.

The year's profits of the Book Room exceeded £4,300, of which £3,800 had been given to the Superannuated Ministers' Widows' and Orphans' fund. The total issue of publications had been more than 2,500,000.

The Conference met at Northampton, June 10. The Rev. Joseph Ferguson was chosen president. The first subject for discussion concerned the age qualification for Deed Poll membership, regarding which the Conference reaffirmed the declaration of the Conference of 1886, that the fact that any minister has to apply for superannuation is proof of his physical incapacity to perform the duties of that office. A proposition submitted to the quarterly meetings for the recognition of a separate order of evangelists, the Connectional establishment of an evangelists' home, and the setting apart of a minister to train evangelists and superintending their work had been defeated by an overwhelming majority adverse to all its counts. In its resolution concerning educational measures the Conference

declared itself in favor of free education, and of a board or undenominational school being placed within easy reach of every child in the country; protested against any scheme of assisted education which did not at the same time grant popular control of the schools assisted; and expressed the belief "that the proposals which have been made by the Government would not only perpetuate, but would intensify the anomalies and injustice which already exist, and would be dangerous to the civil and religious liberties of the people of the country and contrary to their social and intellectual progress and freedom." Legislation was proposed, to the effect that no person engaged in the manufacture or sale of intoxicating liquors, or holding shares in any limited liability or joint-stock company where intoxicants are manufactured or sold, should be a member of the Connection. The view prevailed in discussion that so positive a measure might bear in some instances upon really blameless persons, and the Conference, while it accepted the principle of the proposed legislation, referred the arrangement of the details to the General Committee. Public attention being at the time directed to the scandals developed in the judicial proceedings in the "baccarat case," the Conference in its resolutions declared its regret that the Prince of Wales did not follow more closely the example of his royal parents, and also expressed the opinion that his conduct was not consistent with the exalted position of the heir-apparent to the throne, and the belief that it would do incalculable injury to large masses of people. The Conference, it was added, "while profoundly regretting his conduct, respectfully expresses the hope that he will refuse in future to give further countenance to this degrading national vice in any of its forms."

The income of the Primitive Methodist Missionary Society was £11,099 for the General fund and £2,313 for the African fund. The expenditure had been £10,476 for the General fund, and £2,363 for the African fund. The society had 54 stations in the United Kingdom, with 7,041 members, and 653 members on the foreign stations.

Congregations of Primitive Methodists largely composed of emigrants from Great Britain have been formed in the United States, chiefly in New England, Pennsylvania, and Wisconsin. Until 1891 they were formed into two conferences, the Eastern and the Western. At its session in 1891 the Eastern Conference was divided into Eastern and Pennsylvania Conferences.

VII. Methodist New Connection.—The numerical summary of all the districts of this body, at home and abroad, gives as totals; Number of chapels, 522; of ministers, 203; of local preachers, 1,239; of members, 31,020; of probationers, 4,561; showing an increase during the year, of 211 members and a decrease of 375 probationers.

Missionary reports were made to the Conference from the home missions and missions in Ireland, and from China, where there were 10 native students in the Training Institution, 1,390 members and 530 on trial, and 6,000 patients had been cared for in the medical work. Within six months 39 invitations, each signed by from 20 to 100 people, had been received, to

open new preaching stations. Services had been established in 20 of the places.

The Conference met in Leeds, June 15. The Rev. Henry I. Marshall was chosen president. The Connectional Committee reported concerning the negotiations for union with the United Methodist Free Churches, transmitting the resolutions of the General Assembly of those societies and calling attention to the fact that they did not express an opinion on the particular point which the last Conference of the New Connection had submitted to the judgment of the Assembly. The Conference ordered that the resolutions of the Assembly of the United Methodist Free Churches be placed on the minutes, and added to them as its own expression:

That, considering that the Assembly of the United Methodist Free Churches gave no deliverance on the report of the joint committee, and considering especially that the discussion of the question of the union has developed serious differences of opinion and sentiment among our ministers and people, the Conference is constrained to conclude that further action in relation to the proposed union is not at present advisable. The Conference, however, devoutly trusts that whatever may be the course of events, the relations of the ministers and members of the two denominations will continue to be those of fraternal sympathy and cordial co-operation in the great common cause of our Lord Jesus Christ.

In its resolutions on education the Conference unanimously approved of a system of free education which should extend throughout the whole school life, and declared that no scheme for free or assisted education would be satisfactory which did not provide for the universal establishment of school boards charged with the duty of supplying all educational deficiencies as they might arise; and that in every case there should be a board school within reasonable reach of all. A full delegation was appointed to attend the Methodist Ecumenical Conference. An invitation to appoint two persons as guests to attend the Congregation Council was accepted, and they were appointed. In a resolution unanimously adopted the Conference expressed sorrow

at the recent revelations in a court of law of gambling, and cheating in gambling, by those who occupy high positions in society, and from whom, therefore, a higher example of virtue should proceed. But it is most deeply concerned that the Prince of Wales should have been intimately involved in these disreputable proceedings. Such encouragement of vice and immorality by one from whom the nation expects impulse and encouragement to its higher life is fraught with great danger to its future well-being. It earnestly hopes that all such practices by one who aspires to be the king of a Christian people will henceforth cease.

VIII. United Methodist Free Churches.—The following is a summary of the statistics of these societies as they were reported to the Annual Assembly in July: Number of itinerant preachers, 378; of supernumeraries, 43; of local preachers, 3,333; of leaders, 3,801; of church members, 77,710; of persons on trial for membership, 8,134; of chapels, 1,399; of preaching rooms, 235; of Sunday schools, 1,374, with 26,514 teachers and 203,333 pupils.

The Annual Assembly met in Sunderland, July 14. The Rev. M. T. Myers was re-elected president. Reports were made of the condition

of the Benevolent fund. The income of the Superannuation and Beneficent fund had been £8,838, and the expenditure on its account £7,188. The capital of the fund had reached £40,076. The income of the Chapel Relief fund had been £603, and the expenditure £471. Advances had been made from the Loan fund of £2,190. The capital of this fund amounted to £12,760. The "Silver Wedding fund" (a fund commemorative of the twenty-fifth anniversary of the Annual Assembly) amounted to £29,560. The newly formed Chapel Insurance fund had issued 429 policies. The Book Room returned a year's profit of £1,802. The amount of £23,284 had been raised for foreign missions and £21,997 had been expended upon them. A scheme for the prosecution of special active evangelistic work among the masses, denominated "forward movement," was introduced, for which it was proposed to raise the sum, of £15,000, to be called the "Wesley Memorial fund." In the Connectional evangelistic scheme 12 evangelists had been employed during the year, conducting 86 missions. Forty thousand books and 8,000 Bibles and Testaments had been sold through the operation of the Jubilee and John Wesley mission cars. Questions relating to the employment of woman evangelists and the evangelization of villages were referred to the Connectional Committee for consideration. A training house for female workers, suitably furnished, fitted up by private means, was offered to the Assembly as a gift, and accepted. The Assembly acknowledged the reception of the resolutions of the Methodist New Connection Conference on Union, reciprocating the friendly and fraternal sentiments expressed in them, and declared:

That this Assembly derives great satisfaction from the fact that, both by resolution and by its representatives on the joint committee, the Annual Assembly has earnestly and honestly endeavored to give practical effect to the sentiment and principle of Methodist Union, and it now confidently leaves the ultimate issue with the great Head of the Church, believing that in his own time, and in his own way, he will accomplish that unity among his people for which he earnestly prays.

The annual meeting of the United Methodist Free Churches Home and Foreign Missionary Society was held in London, April 27. Mr. R. Shadforth presided. The society's income for the year had been £21,609, and its expenditures £22,081. The report showed that the society had 66 missionaries, 295 lay preachers, 10,335 church members, 227 preaching places, and 11,347 pupils in Sunday school, each item showing an increase.

IX. Bible Christian Church.—The summaries of the connectional statistical reports of this Church presented to the conference in July give as the number of local preachers 1,923; of chapels, 854; of preaching places, 159; of full members, 31,601; of members on trial, 562; of teachers, 8,946; of pupils, 52,503. A net increase of 662 members was returned.

The Conference met at Plymouth, July 29. The Rev. Frederick William Bourne was chosen president. The Missionary Society returned an income of £4,757, showing an increase of £138. A committee was appointed to draw up a scheme for the fitting celebration of the centenary of the

birth of James Thorne, which will occur in 1895.

The Missionary Convention of the Bible Christians was held in London, May 4. Resolutions were adopted recommending earnest preaching "in the power of the Holy Ghost sent down from heaven," and advising every effort to establish mission centers in all the important towns as well as to sustain and extend the operations of the society in the colonies and China.

Œcumenical Conference.—The second Œcumenical Methodist Conference (the first having been held in London in 1881) met in Washington, D. C., Oct. 7. The following churches were represented by a total of 300 delegates from the Western Section and 200 from the Eastern Section. *Western Section:* Methodist Episcopal Church, Methodist Episcopal Church, South, Methodist Church in Canada, African Methodist Episcopal Church, African Methodist Episcopal Zion Church, Colored Methodist Episcopal Church, Methodist Protestant Church, United Brethren in Christ, American Wesleyan Church, Union American Methodist Episcopal Church, African Union Methodist Protestant Church, Free Methodist Church, Congregational Methodist Church, Primitive Methodist Church, British Methodist Church, Independent Methodist Church, United Brethren in Christ (Old Constitution), Evangelical Association. *Eastern Section:* Wesleyan Methodist Church, Primitive Methodist Church, United Methodist Free Churches, Methodist New Connection, Irish Methodist Conference, Bible Christian Church, Wesleyan Reform Union, Free Gospel Church, Australasian Wesleyan Methodist Church, French Wesleyan Conference, West Indian Wesleyan Conference, South African Wesleyan Conference. Previous to the opening of the Conference a reception was given in New York to the delegates, Oct. 5, when Mr. John D. Slayback presided. An address of welcome was made by the Rev. J. M. King, D. D., and addresses in response were made by the Rev. T. B. Stephenson, D. D., President of the British Wesleyan Conference, and by representatives of other foreign and American Methodist churches. Bishop Thomas Bowman, of the Methodist Episcopal Church, presided at the opening session of the Conference. The opening sermon by the Rev. Dr. William Arthur, of England, was read for him by the Rev. Dr. T. B. Stephenson. An address of greeting was made by Bishop J. F. Hurst, of the Methodist Episcopal Church, who spoke to the French and German delegates in their own languages. Other addresses were made by the Hon. J. H. Carlisle, of Wofford College, S. C., the Rev. George Douglass, D. D., of the Methodist Church of Canada, and the Rev. Dr. T. B. Stephenson, of England. At the following sessions the chief officers or representative delegates of the several bodies participating in the Conference presided in turn. The following subjects were discussed, in essays and by chosen and volunteer speakers: "The Present Status of Methodism in the Eastern Section" (Great Britain, Europe, and the Eastern Colonies); "The Present Status of Methodism in the Western Section" (America). "The Christian Church, its Essential Unity and General Catholicity"; "Christian Co-operation." The general subject of "The Church and Scientific Thought"

was discussed under the heads of "The Influence of Modern Scientific Progress on Religious Thought," "The Attitude of the Church toward the Various Phases of Unbelief," and "The Bible and Modern Criticism"; that of "The Church and her Agencies" under the heads of "The Responsibility and Qualifications of the Preacher," "Church Agencies," "The Intellectual and Moral Qualifications of the Preacher," "The Religious Press and the Religious Uses of the Secular Press," "The Place and Power of Lay Agency in the Church," "The Deaconess Movement," "Methodist Brotherhoods and Sisterhoods," and "Woman's Work in the Church"; the subject of education under the heads of "The Religious Training of the Young," "The Family," "The Sunday School," "Elementary Education, how it may be best promoted," "The Ethics of Elementary Education," "Sectarianism and State Education," "Secondary Education," "The Broadest Facilities for Higher Education the Duty of the Church," "University Education," and "The Adaptation of Œcumenical Methodism to World Leadership in the Field of University Education"; that of "Romanism" under those of "Romanism as a Political Power" and "Romanism as a Religious Power"; that of temperance under those of "The Church and the Temperance Reform" and "The Legal Prohibition of the Saloon"; that of "Social Problems" under those of "The Church in her Relation to Labor and Capital," "The Moral Aspects of Labor Combinations and Strikes," "The Moral Aspects of Combinations of Capital," "The Obligations of the Church in Relation to the Social Condition of the People," "Christian Work among the Poor," "Christian Work among the Rich," and "Christian Work in Agricultural Districts"; that of missions under those of "Missions in Heathen Lands," "New Fields entered since 1881," and "Missions in Christian Lands"; that of "The Church and Public Morality" under those of "Legal Restraints on the Vices of Society," "Marriage and Divorce Laws," "The Lord's Day," and "The Attitude of the Church toward Amusements." Other subjects treated of were "International Arbitration," "The Christian Resources of the Old World," "The Christian Resources of the New World," and "The Church of the Future."

An executive commission was constituted on the basis of the organization of the Œcumenical Conference, to consist of eighty members, and be divided into the Eastern Section with thirty members and the Western Section with fifty members, the same to be distributed by a fixed plan among the several bodies associated in the Conference. It was given power to act in the interim of the Œcumenical Conference not exceeding the limitation of the rules of that body. The conference recognized gratefully the growing desire for closer union among the evangelical churches, and particularly the extension of that desire among the various Methodist churches; declared that it could not doubt "that concerted action among the different Methodist bodies upon many questions would be greatly to the advantage of the kingdom of God"; suggested "that such concerted action might be possible and useful in the following great provinces of the Methodist world, namely: (a) Great Britain and Ireland, in-

cluding the affiliated conferences and missions; (b) the United States, including its missions and mission conferences; (c) Australasia, with Polynesia and its other missions; (d) Canada, with its mission." The churches represented, in the Conference were therefore requested "to consider whether such concerted action be possible, and, if so, by what means and in what way." A scheme for the erection of a bronze statue of John Wesley in the city of Washington was approved, and a committee was appointed to further it. Fraternal delegates to the Presbyterian Council of 1892, to be held in Toronto, Ontario, were provided for. A memorial was addressed to the commissioners of the Columbian Exposition against opening the fair on Sunday. Resolutions were passed on the subject of social purity, against immoral legislation, and urging that men of notoriously immoral life should not be allowed to occupy places of public trust and authority; expressing sympathy with movements for the abolition of the opium traffic in Asia; and the following on the subjects mentioned in it:

This Conference views with deep concern the subtle and persistent efforts of the Roman hierarchy to make its power felt outside its own proper sphere in many lands, to the detriment and danger of the civil and religious liberties of the people.

This Conference recognizes with satisfaction the fact that the Roman Catholic laity have in notable instances had the courage and the wisdom to withstand the unwarrantable pretensions of their ecclesiastical superiors, and the Conference further disclaims any intentions to seek for itself or the churches it represents a single privilege which it would not readily concede to all others; but it feels bound to remind the members of these churches of the sacred rights and privileges they enjoy, won for them by the sacrifices and fidelity of their forefathers, and to call on them to unite with the members of other Protestant churches in maintaining their great inheritance of freedom, and handing down the same intact to the succeeding generations.

A pastoral address was issued to the ministers and members of all the Methodist churches throughout the world.

African Methodist Union.—A meeting of representatives of the African, African Zion, and Colored Methodist Episcopal Churches was held in Washington during the session of the Methodist Ecumenical Conference, in favor of fraternity and organic union. Resolutions were passed favorable to organic union. The bishops of the several churches represented were requested to present the subject to their several annual conferences and to advocate the appointment of a commission concerning it; and a committee was appointed to publish accounts of all matters in connection with the Conference.

MEXICO. A federal republic in North America. The legislative power is vested in the Congress, consisting of a Senate, in which each of the 27 States and the Federal District is represented by two members elected indirectly for four years, and of the Chamber of Deputies, the members of which are elected biennially by direct popular suffrage. One half of the Senators retire every two years. The Congress meets on Sept. 16 for general legislative business, and adjourns on Dec. 15, unless the session is prolonged thirty days more. On April 1 it comes together again, and till May 31 is occupied with auditing the accounts of the previous financial year and passing

the budget for the year to come. The President of the United Mexican States is chosen for four years by an electoral body created by the general suffrage. The President has the right to appoint and remove the seven Secretaries of State. Gen. Porfirio Diaz entered on his second term as President on Dec. 1, 1888. The Cabinet at the beginning of 1891 was made up of the following members: Secretary of Foreign Relations, Ignacio M. Mariscal; Secretary of Finance, M. Dublan; Secretary of War and the Navy, Gen. Pedro Hinojosa; Secretary of the Interior, Manuel R. Rubio; Secretary of Justice and Public Instruction, Joaquin Baranda; Secretary of Public Works and Commerce, C. Pacheco. In June Benito Gomez Farias became Minister of Finance, and Manuel Fernandez Leal was appointed Secretary of Public Works, Colonization, and Industry. On July 1 a new department, that of Communications and Commerce, was created, of which Manuel G. Cosío was made Secretary.

Area and Population.—The area of Mexico is 751,664 square miles. About 19 per cent. of the native inhabitants are of pure Spanish blood, 38 per cent. Indians, and 43 per cent. of mixed blood. The great majority of the people profess the Roman Catholic religion, which has, however, no legal advantage over other forms of faith. Monastic orders are not allowed, marriage is a civil contract, and religious societies are forbidden to hold land. Education in most States is gratuitous and compulsory. There were 10,726 elementary schools in 1888, with 543,977 pupils, besides a great number of intermediate schools, colleges, and professional and technical schools.

Finance.—The Federal Government derives its revenue from import and export duties, stamps, and internal taxes on certain articles of consumption and from contributions levied on the individual States. The States levy direct taxes, and have hitherto imposed excise duties on imported and domestic merchandise. In 1891 a revision of the system of State taxation was taken in hand with the design of doing away with the duties on imported articles. The Federal revenue in 1890-'91 was estimated in the budget at \$41,770,000, and expenditure at \$38,452,804. The foreign debt, contracted in London and Berlin, is £16,500,000, consisting of £10,500,000 of 6-per-cent. bonds issued in 1888 for the purpose of redeeming the old defaulted debts at the rate of 40 cents on the dollar in accordance with an arrangement concluded with the creditors in June, 1886, and of a further loan of £6,000,000 obtained in September, 1890, to enable the Government to pay off arrears of railroad subventions. The internal debt, as far as it has been converted, amounts to \$31,500,000. In 1890 Congress authorized the Minister of Finance to arrange a compromise with the holders of the old Spanish bonds of the nominal amount of \$14,000,000. The Federal revenue increased from \$14,882,366 in 1868-'69 to \$32,385,981 in 1888-'89. In 1889-'90 the expenditure was \$36,765,895, of which the items were \$12,449,693 for army and navy, \$6,145,555 for public works, \$5,910,370 for financial administration, \$5,400,003 for the debt, \$3,553,128 for the interior, \$1,350,471 for education and worship, \$1,009,036 for legislation, \$465,095 for justice, \$432,695 for foreign relations, and \$49,849 for the executive.

In the new customs tariff proclaimed by the President in September, 1891, the duty on live stock was largely raised; that on sheep and goats from 35 cents to \$1.50 each, that on mules from

cents to 8 cents, that on cotton was raised to 10 cents a kilogramme, net weight. Duties on furniture were considerably lowered, those on jewelry were raised largely, those on watches were ad-



REGLA FALLS, ON A TRIBUTARY OF THE PANCO, MEXICO.

\$2 to \$5, that on cattle from \$3, and that on hogs from \$2.25 each to 3 cents a kilogramme. The duty on tallow was advanced from 7 cents to 10 cents a kilogramme, that on macaroni from 8

vanced in a less degree, and a heavy tax has been placed on precious stones, which were formerly exempt. The duty on fine-grained gunpowder was reduced by one half, and coarse powder and

dynamite were placed on the free list. Machinery, coal, telegraph and telephone wires, iron pipes, and wood pulp remain on the free list.

The Army and Navy.—The standing army in 1891 consisted of 17,307 infantry, armed with Remington rifles of .43 caliber; 5,484 cavalry; 1,604 artillery, having steel breech-loaders and other modern guns; 655 engineers; 1,950 rural guards; and 244 gendarmes; making a total of 27,244. There are over 3,000 officers, and the total military strength of the nation, including the reserve of the active army and the general reserve, is 181,523 infantry, 25,790 cavalry, and 3,650 artillery. The military academy at Chapultepec has about 300 students. The naval force consists of two unarmored vessels carrying two 20-pounders and three small gunboats.

Commerce and Production.—The export trade has increased from \$32,663,554 in 1879-'80 to \$62,499,388 in 1889-'90. Aside from silver, the greatest increase has been in henequen and in coffee, the export of which increased from less than 6,000,000 kilogrammes in 1883 to 9,250,000 kilogrammes in 1890. Henequen is grown on the peninsula of Yucatan. The export of this fiber in 1889-'90 was valued at \$7,392,244, against \$6,872,593 in 1888-'89. The ramie culture is encouraged by the Government. Other fibrous plants are the organ cactus and the species called *cirio*, growing in Lower California, from which paper is made. The export of ixtle in 1889-'90 was \$827,980 in value. Coffee is raised in the States of Chiapas, Vera Cruz, Morelos, Oajaca, Colima, and in Michoacan, where the celebrated Uruapam coffee is produced. The crop is valued at \$4,200,000 per annum, and one half of it is exported to the United States, which is the chief market for henequen, taking 80 per cent. of the entire export. The value of the coffee export in 1889-'90 was \$4,811,000, against \$3,886,035 in 1888-'89. Cotton is produced without fertilizers and with little cultivation in Sonora, Chihuahua, and other States, and the annual crop is valued at \$10,857,000; but the culture has become less profitable since the railroads were built, allowing foreign cotton to be brought to the manufacturing centers at less cost than the domestic product. Cacao of fine quality is produced in Tabasco and Chiapas, but not on a large scale for export. Tobacco has become an export article of importance; the value of the crop is about \$2,500,000 per annum, and the export in 1889-'90 was \$948,332. The rubber exports from the Soconusco district, where the best cacao is raised, have almost ceased because the Indians have destroyed the trees. The Public Works Department in 1889 made a contract with three Mexican citizens who have undertaken to plant a million trees a year for the next fifteen years in the State of Oajaca. The sugarcane is cultivated extensively in Morelos, Vera Cruz, and other States; the average value of the crop is \$8,735,000. The vanilla plant grows wild, and the export of this article was \$917,409 in value in 1889-'90. The gum exports were \$719,746. Orchil weed is collected in Lower California, and pays an export duty of \$10 a ton. Other mosses and lichens are gathered for the dye substances that they yield. Medicinal herbs and roots are found in the *tierras calientes*, the low plains on the Gulf of Mexico, and in the forests

near the foot-hills of the Cordillera, which abound also in mahogany, ebony, rosewood, rubber, Campeche wood, ironwood, and trees yielding medicinal substances. The exports of woods in 1889-'90 were \$1,739,138, against \$1,390,215 in the previous year. Sarsaparilla is gathered for export. The cultivation of the banana on the coasts has become a profitable industry, and the exportation of oranges from the State of Sonora and the hot lands on the Gulf of Mexico is increasing. The fruit brings high prices in the American market. The same regions produce lemons, nuts, guavas, pine-apples, tamarinds, citrons, and all kinds of tropical fruits and other products in great variety, including rice, arrow-root, beans, jalap, indigo, plantains, and dates. They also contain good grazing ground. Indian corn thrives in all parts of Mexico, and furnishes the staple food of the people. Usually two crops are grown every year. Since the introduction of the wheat culture on the Mexican plateau the two crops are raised in alternation, one of wheat and two of corn every two years. Wheat began to be exported from Sonora to Liverpool in 1889, and the authorities have taken measures to encourage the trade. It is estimated that 110,000,000 bushels of wheat and 440,000,000 bushels of corn might be exported if the entire suitable area were brought into cultivation. The cereal product of all the States in 1888 was returned as 131,478,425 bushels of corn, 11,396,195 of wheat, and 5,930,716 of barley. Of beans, which form an important part of the diet of the people, 7,766,980 bushels were raised. One of the great agricultural industries is that of the *maquey* or agave, from which the national fermented drink, *pulque*, is extracted, while the pulp and fiber are used for making paper, cordage, and other articles. The raising of cattle in Sonora, Chihuahua, Coahuila, and others of the northern States, as well as in Vera Cruz and Michoacan, has become one of the largest interests of the country. In the north large ranches have been bought and stocked by Texan cattle growers and British capitalists. The capital value of the 20,574 cattle ranches existing in 1883 was \$515,000,000, and in that year there were estimated to be in the country 1,500,000 horned cattle, 1,000,000 sheep, 2,500,000 goats, 1,000,000 horses, and 500,000 mules. The exports of horses, cattle, and other animals to the United States in 1887-'88 were valued at \$507,377. In 1889-'90 the value of the animal exports was \$500,217. The exports of hides and skins reached \$1,913,129.

The cotton mills consume 80,000,000 pounds of cotton annually, of which one third is imported from the United States, and the value of the product is \$13,000,000. The native industries of distilling, cigarette making, pottery, the weaving of woolen *zarapes* or blankets, tanning, saddlery, hammock making, etc., are being supplemented by others at a rapid rate; though as yet only the beginnings of manufacturing industry have been made. Sugar is extracted by primitive processes. Good iron is produced and common agricultural implements are made in the country. The textile and other factories in the State of Colima have been freed from all taxes, and by the law of 1887 anything required for wine growing, the silk culture, or fish culture can be brought free of duty into any part

of Mexico. Agricultural implements of immigrants are likewise exempt. The State of Puebla in 1886 offered a bounty of 50 cents a kilogramme for all the silk produced, and exempted mulberry plantations from taxes. The silk fac-

years. Subsequently more than eighty articles necessary for the mining and agricultural industries were transferred to the free list. There are more than 1,000 mines in the republic, employing about 200,000 men, and turning out



CHIHUAHUA CATHEDRAL.

ories of Tetela and Oajaca are equipped with French machinery, and the industry is growing rapidly. Coal, iron, and quicksilver mines were exempted in 1887 from all taxation for fifty

\$30,000,000 worth of silver and \$5,000,000 worth of other minerals per annum. The export of silver in 1888-'89 was \$38,000,000. The capital invested in silver mines is \$500,000,000,

of which about one fifth belongs to American citizens. Coal is mined in Coahuila to supply the Southern Pacific Railroad. Anthracite was discovered in Sonora, Puebla, Michoacan, and other States in 1881, but it can not be profitably mined. The Mexican railroads use English coal, and the steam factories wood and charcoal. Petroleum and asphaltum are widely distributed, but are not utilized. The lead exports in 1889-'90 were \$607,329 in value.

Of the total exports in 1889-'90 the United States received \$43,022,440; England, \$13,722,122; France, \$3,159,258; Germany, \$1,693,773; Spain, \$534,057; other countries, \$367,738. Exclusive of coin and bullion and silver ore, the imports into the United States from Mexico were valued at \$22,690,915, as compared with \$21,329,601 in 1889, \$17,329,889 in 1888, \$14,719,840 in 1887, \$10,687,972 in 1886, and \$9,267,021 in 1885. The exports of fibrous substances to the United States were \$5,851,822 in value; coffee, \$3,542,851; hides and skins, \$1,579,250; drugs and dyes, \$1,349,743. The largest article of export to Great Britain and to France is mahogany and other hard wood. The total value of the imports in that year was \$46,000,000, having risen in steady progression from \$38,715,000 in 1885-'86. The imports from the United States were valued at \$12,666,108, the principal articles being iron and steel goods, raw cotton, furniture, and cotton fabrics. From Great Britain iron and machinery and cotton goods are largely imported, and from France, are sent woolen manufactures, wines, apparel, and all kinds of fine goods.

Railroads.—There were 4,648 miles of railroad in operation in 1890, and 1,360 miles more were building. American companies had \$245,126,249 invested, and English companies about \$75,000,000. In 1889 the number of passengers was 12,977,952. The receipts from passenger traffic were \$2,090,505, and from 875,894 tons of freight carried \$4,822,690. In 1890 the line from Tampico to San Luis de Potosi, opening communications with the northern part of the central plateau, was completed. Connecting links were made between the railroad from Monterey to the Gulf and the International and National Mexican lines, and an extension from Monterey to Linares was finished. The Jalapa and Matamoras Izucar sections of the Inter-oceanic line were completed, and connection was made with the Halmanales Railroad. In the same year the Valley of Mexico and the North-eastern Railroads were opened to traffic. The Mexican Central Company, incorporated in Massachusetts in 1891, had 1,527 miles open in 1891; the Mexican National, 1,248 miles; Mexican, 321 miles, exclusive of 71 miles in the Jalapa branch; Mexican Northern, 78 miles; Mexican Southern, 79 miles; Monterey and Mexican Gulf, 390 miles; Sinaloa and Durango, 38 miles; International, 409 miles; Sonora, 262 miles. The International Railroad, begun in 1883 and completed in 1888 by a company chartered in Connecticut, was built chiefly to transport coal from mines in Coahuila that have not yet proved profitable. It runs from Ciudad, Porfirio Diaz (formerly Piedras Negras), on the Rio Grande, to Torreon, where it connects with the Mexican Central. On Aug. 1, 1891, the

railroad, which has a share capital of \$11,835,500 and a debt of \$9,742,000, was transferred to an English company.

Posts and Telegraphs.—There were 87,509,640 inland and 37,193,403 international letters, papers, etc., sent through the post-office in 1889. The length of the telegraph lines in that year was 27,861 miles, of which 14,841 miles were the property of the National Government. Of the rest, about a third belonged to the States, and the remainder was divided between railroad and telegraph companies.

Relations with the United States.—Negotiations for a revision of the extradition treaty with the United States were opened by the Mexican Government in April, 1891. A convention for a new survey of the boundary by a mixed commission was concluded. The commissioners began their work in November. Col. Jacobo Blanco and Felipe Valle are at the head of the Mexican commission, the former as chief engineer and the latter as astronomer. The United States commissioners are Col. John W. Barlow and Lieut. David du B. Gailliard, of the Engineer Corps, and M. H. Moseman, of the Coast Survey. In the new Mexican tariff, which went into force on Nov. 1, 1891, the duties were raised on many articles of American produce and manufacture as a preliminary to negotiating new reciprocity arrangements with the United States Government. José Limatour, President of the Chamber of Deputies, was appointed a special commissioner to discuss the bases of a new treaty. The reciprocity convention concluded at Washington on Jan. 28, 1883, by Gen. U. S. Grant and William H. Trescott, acting for the United States, and Minister Matias Romero and Estanislao Canedo as Mexican plenipotentiaries, was signed by the presidents of both republics in May, 1884; ratifications were exchanged at Washington on May 20, and the convention was proclaimed on June 2, 1884. It could not go into effect until the laws and regulations necessary to carry it into operation were passed by both countries, and for this the term of one year, from May 20, 1884, was allowed. On Feb. 25, 1885, the period was extended to May 20, 1886, both governments having failed to pass the necessary legislation. On May 14, 1886, the term was extended for another year, and on May 20, 1887, the treaty became void, the bill to give it effect having been rejected by the House of Representatives in Washington.

Insurrectionary Movement.—Since the secularization of the State various revolutionary uprisings have been fostered by the clerical party. The revolution of Palo Blanco, which unseated Lerdo de Tejada and made Gen. Porfirio Diaz President for the unexpired term, in 1877 was of a different character. In 1884 Diaz was regularly elected, and his administration has since been marked by prosperity, the introduction of American capital, and a great development of the national resources. His enemies accuse him of selfish ambition, of the arbitrary removal of officials who were not subservient to his personal aims, of accepting gifts of stock in companies receiving concessions, and of pursuing a system of religious persecution and oppression of the Catholic Church. Prominent

among the denunciators have been Gen. Reiz Sandival, who was expelled from the army for sedition, and Catarino Garza, a journalist who has conducted several revolutionary periodicals hostile to the Diaz Government in the border towns of Texas, and has lately resided on his cattle ranch near Palito Blanco, Texas. The latter collected a band of revolutionists, and in September, 1891, he issued a manifesto proclaiming the overthrow of Diaz. At the head of from 50 to 100 men he crossed the Rio Grande, and had several encounters with Mexican troops. When pursued, he and his lieutenants who invaded Mexico with other guerilla bands took refuge on the American side of the river. Gen. Sandival, in the mountain districts of northern Mexico, recruited men for the revolutionary enterprise and laid plans for a general uprising. In the States of Nueva Leon, Tamaulipas, Coahuila, and Chihuahua there was a widespread sympathy with the revolutionary movement, and the Mexicans of Texas were generally in league with Garza. For that reason warrants issued by the United States authorities for the arrest of persons accused of abetting the movement could not be executed. Capt. Bourke and Capt. Hardie endeavored to intercept Garza's bands when they appeared on the American side, with detachments of the United States cavalry force stationed at Fort Ringgold. Companies of Texas rangers also took the field. Re-enforcements of regular troops were hurried up to strengthen the frontier guard. The guerillas, who were superior in numbers, made every effort to avoid combats with the American forces, and would not fire unless driven into a corner. The wild nature of the country was favorable for their concealment, and when hard pressed they could disperse and disguise themselves as cattle herders. Nevertheless, several of the bands were overtaken and some of the members were wounded and taken prisoners. Nothing would induce these men to reveal the plans of the conspiracy and the persons engaged in it.

After they were dispersed by the Mexican troops in their first raids, the revolutionists did not venture across the border in force for many weeks. On Nov. 16 they attacked Guerrero in considerable numbers. At the same time Garza issued a proclamation in which he spoke in the name of the oppressed priests and Churchmen and plundered masses of Mexico, and called on patriots everywhere to join him, saying that his force was strong enough to cope with the Mexican army. His followers had increased already to nearly 1,000 men, and others were joining fast. An invoice of arms brought from New York, consisting of 1,000 rifles, was captured in the Rio Grande by the American custom-house officers. Gen. Sandival was said to be organizing another insurrectionary army in which 2,000 men were enrolled. Gen. Lorenzo Garcia encountered a large body of Garza's men, and the revolutionists were driven to take refuge in the desert parts of Texas. The Mexican Government, alarmed at the rapid spread of the insurrection, hastened troops from central Mexico until they had 8,000 or 10,000 near the frontier, and were able to patrol the whole length of the Rio Grande with squads of 50 men and garrison the States of Nueva Leon and Coahuila. Dis-

tress in northern Mexico, caused by a failure of the crops, created a condition favorable to revolution. A guerilla war was still carried on near the border by detached bands of Garza's men, who escaped into Texas when attacked and pursued in force by Col. Ceron's frontier guard. The Mexican operations were directed by Gen. Bernardo Reyes at Monterey. The American troops co-operating to prevent a violation of the frontier, though consisting only of two companies of infantry and two of cavalry, were able by their activity to compel the bands to scatter wherever they were assembled on American soil. The persons engaged in the movement who were residents of Texas were compelled to return to their ranches, where they were located by spies and scouts, and roundups were carried out by the United States troops, which resulted in the capture of some of the leaders.

MICHIGAN, a Western State, admitted to the Union Jan. 26, 1837; area, 58,915 square miles. The population, according to each decennial census since admission, was 212,267 in 1840; 397,654 in 1850; 749,113 in 1860; 1,184,059 in 1870; 1,636,937 in 1880; and 2,093,889 in 1890. Capital, Lansing.

Government.—The following were the State officers during the year: Governor, Edwin B. Winans, Democrat; Lieutenant-Governor, John Strong; Secretary of State, Daniel E. Soper, who resigned in December and was succeeded by R. R. Blacker; State Treasurer, Frederick Braastad; Auditor-General, George W. Stone; Commissioner of State Land Office, George T. Shaffer; Attorney-General, Adolphus A. Ellis; Superintendent of Public Instruction, Ferris S. Fitch; Commissioner of Insurance, William E. Magill; Commissioner of Railroads, Charles R. Whitman; Commissioner of Labor, Henry A. Robinson; Commissioner of Mineral Statistics, Charles D. Lawton; Chief Justice of the Supreme Court, John W. Champlin; Associate Justices, Allen B. Morse; John W. McGrath, Charles D. Long, Claudius B. Grant. On Dec. 31 Chief Justice Champlin's term expired, and Justice Morse became Chief Justice. R. M. Montgomery took his seat as Associate Justice on the same day.

Finances.—The following is a summary of the operations of the State treasury for the year ending June 30, 1891: Balance on hand June 30, 1890, \$1,151,259.78; receipts, \$3,181,308.81; disbursements, \$3,107,924.37; balance on hand June 30, 1891, \$1,224,644.32. The summary for the general fund is as follows: Balance on hand June 30, 1890, \$903,420.60; receipts, \$3,090,438.16; disbursements, \$2,117,994.82; balance on hand June 30, 1891, \$972,444.04. Included in the general fund receipts is the sum of \$1,295,184.00, received of county treasurers from the State tax levy. There is also included an item of \$31,000 paid to the State by the General Government for the support of the agricultural college. From specific taxes on railroad, telegraph, and mining companies and the like was realized \$1,071,749.48, nearly all of which was devoted to educational purposes. The following table shows the cost of maintaining the State institutions for the year ending June 30, 1891, and the portion thereof derived from the State treasury:

INSTITUTIONS.	From State treasury.	From other sources.
Michigan Soldiers' Home.....	\$68,897 50	\$40,906 08
Schools for deaf, dumb, blind, etc.	139,209 85	5,758 81
Insane asylums.....	399,219 98	201,698 58
Institutions of learning.....	254,088 17	206,712 91
Reformatory and penal institutions.....	258,324 50	192,998 05
Miscellaneous.....	100,552 73	1,772 92
Total.....	\$1,219,692 73	\$649,842 35

INSTITUTIONS.	Current expenses.	Building and special.
Michigan Soldiers' Home.....	\$72,660 02	\$6,200 64
Schools for deaf, dumb, blind, etc.	118,817 64	6,705 29
Insane asylums.....	544,219 42	46,795 82
Institutions of learning.....	366,410 89	189,505 98
Reformatory and penal institutions.....	397,195 04	77,045 12
Miscellaneous.....	103,754 49	1,892 79
Total.....	\$1,602,547 49	\$277,645 84

The State debt is practically extinguished, there being now outstanding only about \$100,000 of bonds, none of which bears interest. But there is a trust fund debt on which the State pays interest permanently for the benefit of educational institutions. The rate of taxation is 12.7 cents on \$100.

Education.—The following statistics cover the public-school year of 1890-'91: Number of districts 7,168, increase in one year 23; school population 654,502, increase 14,433; number enrolled in public schools 427,032, increase 2,328; average school year in months, 7.7; number teachers employed, 15,990; average monthly wages, male, \$46.78, increase 40 cents; average monthly wages, female, \$32.78, increase 46 cents; number of school-houses, 7,531, increase 38; value of school property \$13,858,627, increase \$571,990. The school revenue for the year was as follows: From balance of preceding year, \$1,095,840.35; from primary-school interest fund, \$795,813.47; one-mill tax in townships, \$658,305.11; district tax, \$3,451,729.93; other sources, \$761,436.34; total, \$6,763,126.20. The total amount paid teachers was \$3,328,287.04. There are reported 6,655 ungraded and 513 graded districts. The free-text-book system has been adopted throughout the State, and in 1891 the city of Detroit also voted by a large majority to furnish all the pupils in the public schools with free books.

The principal of the various educational funds held by the State on June 30, 1891, was as follows: Agricultural College fund, \$395,605.73; Normal School fund, \$64,622.62; Primary School fund, \$4,410,623.05; University fund, \$518,218.01.

The number of students at the various State educational institutions for the year 1890-'91 was as follows: University of Michigan, Ann Arbor, 2,157; Agricultural College, Lansing, 369; Normal School, Ypsilanti, 900; Michigan Mining School, Houghton, 56; School for the Deaf, Flint, 303; School for the Blind, Lansing, 95; State Reform School, Lansing, 715; Industrial Home for Girls, Adrian, 233; School for Dependent Children, Coldwater, 206.

Charities.—Insane patients were distributed among the several asylums as follow: Kalama-

zoo, 1,011; Pontiac, 975; Traverse City, 700; Ionia Asylum for Insane Criminals, 175. All of the institutions are badly crowded, and many insane persons are for that reason kept in jails and county asylums.

The State Soldiers' Home at Grand Rapids has a total enrollment of 1,461, of whom 541 are reported present.

Live Stock.—In the spring of 1891 the Secretary of State reported in Michigan 396,940 horses, 405,818 milch cows, 363,625 other cattle, 450,830 hogs, and 1,908,372 sheep.

Railroads.—The total revenue realized from the operation of Michigan railroads during the year was \$94,096,854.83, an increase over the preceding year of \$5,950,262.45. The operating expenses for the same period were \$63,925,091.54, a decrease of \$689,763.41, leaving a net income on traffic account of \$31,809,276.64, which was \$6,900,470.73 in excess of the net income of the year before.

The total track mileage in the State, as ascertained for purposes of taxation was 6,944.28 miles. The amount realized to the treasury from the specific taxation of railroad companies was \$778,493.91, an increase of \$21,204.99. The capital stock paid in is reported at \$338,199,052.70, making the capital per mile \$23,019.28. The earnings per mile were given in 1891 as \$6,285.11. According to the report of the State Labor Bureau for the year 1891 the funded debt of the railroads of Michigan was \$388,889,869, and the floating debt \$27,490,659. The cost of construction was \$281,205,724.

Banks.—On Jan. 7, 1889, when the present State banking law went into effect, 80 banks were doing business in the State, with assets amounting to \$38,903,417. The report of the banking commissioner for the year 1891 enumerates 124 State banks, with assets amounting to \$65,191,097.53, an increase of 44 in number, and \$26,228,555.34 in assets. These banks on Dec. 2, 1891, reported their deposits \$49,751,468.06. The common rate of interest paid savings depositors was 4 per cent. The 106 national banks in the State reported \$70,555,261.76 in resources, with \$15,244,600 in capital stock and \$38,500,510.19 in deposits.

Salt.—The salt-producing territory of the State is divided into 9 districts, with a total manufacturing capacity of 5,900,000 barrels. In the year ending Nov. 30, 1891, 113 firms operated 122 plants and produced 3,966,784 barrels, against 3,863,407 barrels in 1890. The largest district in the State produced no salt during 1891.

Labor.—The State labor commissioner published an elaborate report covering the year 1891, largely devoted to the condition of female labor in the State. The average wage of the 13,139 working women who reported to the commissioner was 79 cents a day, \$216.45 a year. Only 2,382 women reported that they saved anything from their wages, and these averaged \$62.37 a year. The average expense was reported to be \$202.21 a year, leaving an actual average saving of \$14.24 per annum. The lowest wage paid was \$1 a week and the highest \$18.75. Of the woman workers, 9,108 lived at home and 730 with relatives. The common length of the day was ten hours. One reported a day of eighteen hours, 118 reported working fifteen hours, 168 reported

thirteen hours, 377 reported twelve hours, 7,161 reported ten hours, 1,501 worked nine hours, 968 worked eight hours, 135 worked seven hours, 86 worked six hours, and 1 worked three hours. Of the female laborers canvassed, 181 were under the age of twelve, while 8,569 were between the ages of thirteen and eighteen. Five began work at the age of eight, and 34 at the age of forty or over. Out of the whole number, 1,060 were orphans, 2,361 had no mother, 3,432 had no father, and 8,336 had both parents. The report states that 6,571 of the women stooped over their work, while 2,682 had to reach up.

Land Values.—The average assessed value of agricultural real estate in the lower peninsula, according to the assessment rolls of 1891, is \$20.82 an acre; of city realty, \$2,320.72; of village realty, \$131.44 an acre; timbered land, \$13.53 an acre; of upper peninsula mineral land, \$480 an acre. The average rent of an acre of farm land is 83 cents, and of an acre of city realty \$162.45. In the city of Detroit, in 1884, there were 3,310 persons holding real property under \$1,000 in value, while in 1891 there were 13,774 of the same class, an increase of 10,461, or 316 per cent.

Farm Mortgages.—In a late report the Bureau of Labor states that of 90,803 farms in the State into the condition of which inquiry was made, 84,488 were occupied by owners. The number of farms mortgaged was 43,079, and the number not mortgaged was 47,724. The assessed value of the mortgaged farms was \$79,713,041, the total mortgage indebtedness \$37,456,372, and the average rate of interest 7.2 per cent.

Legislation.—The Legislature sat for about six months at the beginning of 1891. The most famous of its enactments was what is known as the Miner electoral law, which provides that the presidential electors shall be chosen by congressional districts, one from each district, and not on a single ticket by the State at large, as before. The law has given rise to much controversy, and has attracted national attention. The railroad laws were amended in several important particulars. Among the railroad laws enacted was one providing that where passenger earnings were reported by the company to exceed \$3,000 a mile the maximum rate of fare should be 3 cents a mile; where the reported passenger earnings were less than \$3,000 a mile, the maximum fare should be 4 cents. A law providing for the taxation of mortgages was enacted after bitter opposition. Toward the end of the year a movement was set on foot to test the validity of the mortgage tax law in the Supreme Court. Banks declined to take mortgage security unless the borrower or mortgager contracted to pay the tax on the mortgage.

The election law passed by the Legislature of 1891 provides in the main for the Australian system of voting with a secret ballot. The new system was tried in the Detroit municipal election in the autumn of 1891, and met with universal approval. But one serious difficulty arose. The law provided that the tickets nominated by any regularly called convention of any party were to be placed upon the official ballot by the election commission, under such names and captions as the several parties might designate. Two conventions were held by the Democratic party and two tickets placed in the field. Each

of the factions wanted to use the caption "Regular Democratic Ticket" over its nominees on the official ballot to the exclusion of the other faction. The Supreme Court decided, on mandamus proceedings, that both factions were equally entitled to use the caption.

Another important act of the Legislature was to consolidate the several prison boards into one board, and place under the control of a single body all the penal and reformatory institutions supported by the State.

Decisions.—The most important decision of the Supreme Court during 1891 was that by which the law providing for indeterminate sentences for convicted criminals was set aside as unconstitutional. The law was passed in 1889, and under it the trial judge of a State court might sentence a criminal, duly convicted, to serve an indeterminate time in prison, between specified limits, the date of his release being left to the Board of Prison Control, that body to use its discretion. The Supreme Court held the law to be invalid, in that it conferred judicial powers on the Board of Prison Control, and declared that criminals sentenced under the indeterminate system were entitled to their release at the expiration of the minimum period of imprisonment provided by law as punishment for the crimes of which they were convicted. As a result, several convicts were actually released before the expiration of the time they were sentenced to serve.

The court held, in a decision filed during the year, that a female ward of the State Industrial School for Girls might marry without the consent of the board of control or the managers of the institution. The question arose over a girl who was regularly committed to the institution and was afterward sent into a private family on ticket-of-leave, the institution still maintaining its authority over her. She married without the consent of the managers at the school, and was by them imprisoned in punishment. *Habeas corpus* proceedings were instituted, and the young woman's release was ordered by the Supreme Court of the State.

Political.—No general election occurred in the State during 1891. At the spring elections the only office to be filled was that of justice of the Supreme Court, the term of Chief Justice John W. Champlin being about to expire. Justice Champlin was a candidate for re-election on the Democratic ticket, while the Republican candidate was R. M. Montgomery, who was elected after a quiet canvass.

The only notable elections held in the autumn were the special congressional election in the Fifth District to fill the vacancy caused by the death of Congressman M. E. Ford and the municipal election in the city of Detroit. In the former, Charles E. Belknap was the Republican candidate and John S. Lawrence the Democratic candidate. Mr. Belknap was chosen. The Detroit election was chiefly notable on account of the split in the Democratic party. Two city conventions were organized, and two tickets nominated. At the head of one was William G. Thompson for mayor, and the other was led by John Miner. The canvass was characterized by the greatest acrimony. The Republicans nominated Hazen S. Pingree for mayor, and he was elected

by a small majority over all. The Republicans also gained control of the City Council. The Democrats had just secured the State government for the first time in thirty years, and the Detroit split was of the deepest moment to the State at large, inasmuch as it tended to jeopard the supremacy of the party.

MINERAL WOOL OR MINERAL COTTON, a filamentous substance produced from furnace slag, resembling wool or cotton in appearance, useful, by reason of its low conducting power, as packing to prevent the freezing of water pipes and the cooling of steam pipes and boilers, and also to keep out dampness, and as a protection against fire, it being incombustible. The spray from the slag emitted from the volcano of Kilauea is blown by the wind into glassy fibers called the "Hair of Pélé," which have the same nature and character as artificial slag wool, the process of manufacturing which was invented by John Player, and was patented at the United States Patent Office on May 31, 1870, and the patent was renewed on Feb. 1, 1876. The liquid slag issuing from a tap in the pig-iron furnace is conducted through a runnel formed by coal ashes on iron plates to the point where it is to be blown and allowed to fall in a stream about 1 centimetre thick for a distance of 15 centimetres, where it is met by a powerful blast of steam, which separates it into long filaments, as fine as hair and as white as wool, in which form it drops into the room constructed for its reception. This chamber is about 100 feet from the place where the jet of steam strikes the falling stream of slag. In some furnaces the slag is brought on cars in a molten state to the place where it is tapped and blown into the wool house. In the Krupp works at Essen, Germany, a blast of cold air is used, instead of a jet of steam, to blow the slag into filaments. Ordinarily, pellets of slag of various sizes are found mingled with the wool-like mass. These are larger drops of the slag that the blast fails to divide thoroughly, and must be separated from the product. A process for preventing them from falling into the chamber by means of a second blast of steam or air striking the blown slag in its passage through the air transversely from below was patented in Germany by A. D. Elbers in 1877. The light wool, blown upward by this second blast, falls into a basket, while the heavier pellets and lumps are not deflected from their original course. The long filaments are broken up into short ones, and the substance when ready for use has the appearance of wool waste. The handling of mineral wool is attended with some danger to the health, as the fine threads penetrate the skin easily, producing inflammation, and the dust when inhaled irritates the respiratory organs. In some furnaces, after the manufacture of this by-product was introduced it was afterward abandoned on account of the injurious effects on the health of the workmen. The uses of mineral wool are many. As a packing and insulating material for steam pipes, boilers, and cylinders it rivals asbestos. It is used for the insulating layer in ice chests and ice cellars. As a protection against damp and for deadening sound it is used in board floors, and also in roofing. To guard materials exposed to damp and decay it finds various em-

ployments. In making telegraph cables a protective layer of mineral wool is often used. Another application is for the filtration of the corrosive fluids used in the manufacture of paper and pasteboard. For purposes of insulation cotton or linen hose filled with mineral wool is sometimes wrapped round the pipes or cylinders. Another method is to mix it with dissolved borax or alum, forming a soft mass like mortar that hardens and adheres to the parts that are to be insulated.

MINNESOTA, a Western State, admitted to the Union May 11, 1858; area, 83,365 square miles. The population, according to each decennial census since admission, was 172,023 in 1860; 439,706 in 1870; 780,773 in 1880; and 1,301,826 in 1890. Capital, St. Paul.

Government.—The following were the State officers during the year: Governor, William R. Merriam, Republican; Lieutenant-Governor, Gideon S. Ives; Secretary of State, F. P. Brown; Auditor, Adolph Bierman; Treasurer, Joseph Bobleter; Attorney-General, Moses E. Clapp; Superintendent of Public Instruction, D. L. Kiehle; Insurance Commissioner, C. P. Bailey; Railroad and Warehouse Commissioners, John P. Williams, John L. Gibbs, George L. Becker; Chief Justice of the Supreme Court, James Gilfillan; Associate Justices, Loren W. Collins, William Mitchell, Daniel A. Dickenson, and Charles E. Vanderburgh.

Finances.—The estimated receipts and disbursements for the fiscal years 1892 and 1893 are as follow:

ITEMS.	1892.	1893.
<i>Receipts:</i>		
State taxes.....	\$975,000	\$1,000,000
Railroad taxes.....	730,000	735,000
Insurance taxes.....	110,000	115,000
Insurance fees.....	17,000	18,000
Telephone and telegraph fees.....	8,000	9,000
Incorporation fees.....	30,000	30,000
Interest on deposits.....	15,000	15,000
Seed-grain loans.....	15,000	10,000
Mining taxes.....	6,000	8,000
Earnings of various State institutions.....	60,000	70,000
Forestry transfer.....	30,000	35,000
Miscellaneous.....	5,000	5,000
Total.....	\$2,001,000	\$2,050,000
<i>Disbursements:</i>		
Executive expenses.....	\$95,000	\$100,000
Judicial expenses.....	140,000	145,000
Printing and paper.....	35,000	75,000
Interest on railroad bonds.....	65,000	50,000
Support of State institutions.....	840,000	840,000
Repairs, etc., and improvements.....	80,000	80,000
Boards, commissions, etc.....	65,000	75,000
Societies.....	40,000	45,000
Fire companies.....	30,000	32,000
Miscellaneous.....	134,500	134,500
Printing laws in newspapers.....		40,000
Legislative expenses.....		150,000
Total.....	\$1,524,500	\$1,766,500

RECAPITULATION.

Receipts, 1892.....	\$2,001,000	
Disbursements, 1892.....	1,524,500	
Surplus, 1892.....		\$476,500
Receipts, 1893.....	\$2,050,000	
Disbursements, 1893.....	1,766,500	
Surplus, 1893.....		\$283,500
Total surplus, 1892-'93.....		\$760,000

This estimate shows that the excess of receipts over disbursements for the years 1892-'93 will approximate \$700,000, which sum will be available for enlarging and improving State institutions and other necessary objects. The various boards and commissions have suggested expenditures which, if made, would involve an outlay of about \$1,500,000. It will probably be impossible to provide so large a sum of money, as it is forbidden by law to create any further bonded debt, and it is undesirable to increase the tax levy.

In July, 1892, the payment and retirement of the 4½ per cent. Minnesota railroad adjustment bonds becomes possible. The amount then outstanding will be \$3,965,000. All of this sum, except \$1,686,000, is held by the various trust funds of the State. Of the latter, it is proposed that a certain portion be absorbed by the cash available in the Internal Improvement fund, leaving about \$1,500,000 of bonds, which may be allowed to run at the rate of 4½ per cent., or funded into a bond bearing lower interest. It is recommended that a funding bill be prepared permitting the proper officers to take up the bonds when the option may be availed of, in case any saving can be effected for the State. Should the condition of the money market warrant, a bond bearing a rate as low as 3½ per cent. a year could be sold at par. A constitutional amendment authorizing the trustees of the Internal Land Improvement fund to exchange the land contracts in that fund, amounting to about \$1,800,000, for the adjustment bonds held in other trusts, and to provide that when so exchanged an equal number of bonds be canceled, thus extinguishing that amount of the State debt, has been recommended to the Legislature for action.

Legislative Session.—The work of the Minnesota Legislature includes the passage of about 70 general laws and about 800 special laws. The chief contests were over the usury bill to reduce the legal rate of interest from 8 to 6 per cent., which is disposed of for two years; the Keyes Australian law, which passed through the efforts of the Republicans and a few Alliance men and Democrats, requiring the voter to mark every name on the ticket, and the Courier and Hompe railroad bills, the former of which gave way to the latter. Radical changes have been made in the prison law, and the binding-twine plant at the State Prison has been provided for. The State has been reapportioned into congressional districts, and some changes have been made in the election law. Two constitutional amendments at least will be submitted—one in regard to the taxation of telegraph and telephone lines, and the other prohibiting special legislation. The jury system and the penal code have been amended, and changes have been made touching the judiciary. The most important general laws that have become effective are the following:

Joint resolution asking Congress to appropriate money for a ship canal around Niagara.

Joint resolution to Congress protesting against guaranteeing the bonds of the Nicaragua Canal.

Amending the general laws relating to the taxation of railroad lands.

Taxing the output of mining companies.

Regulating building and loan associations.

Legalizing the incorporation of church societies.

Providing for supervision of mutual building associations.

Repealing the law requiring liquor licenses to be taken out at a certain time in the year, and forbidding the issuing of licenses for fractional parts of a year.

Appropriating \$400 for a monument at the scene of the Indian massacre in Swift County.

Providing for the organization of school districts.

Amending law of normal schools.

Regulating labor of railway employes.

Amending section 235 of the penal code, relating to the crime of rape.

Amending section 245 of the penal code, relating to indecent assault upon women.

Amending the penal code relating to the slander of women.

Amending penal code relating to wages of laborers.

Education.—The general condition of the public schools in 1891 is shown by the following statistics: Number of pupils enrolled in the public schools entitled to apportionment, 225,336; for which \$721,136 was allowed, or about \$3.20 for each pupil.

The Governor, in his biennial message, says: "It would be well to enlarge the present high-school board, consisting of three members, to five, the two additional to be selected, one by the Board of Regents and one by the Normal School Board. The employment of a special secretary who would devote his time to the inspection and improvement of the high and graded schools seems to me desirable. Quite a number of graded schools might rank as high schools if the appropriation was increased \$8,000 a year. The sum of \$400 is allowed each high school under certain conditions, and at this time the appropriation only provides for 60. At least 25 additional schools should receive the aid of \$400."

State Institutions of Charities and Corrections.—The following shows the expense of each inmate for the year ending July 31, 1891: St. Peter's Hospital, \$166; Rochester Hospital, \$171; Fergus Falls Hospital, \$428; total insane, \$182. Soldiers' Home, \$266; School for Deaf, \$199; School for Blind, \$325; School for Feeble-minded, \$183; School for Dependents, \$204; Reform School, \$138; Reformatory, \$349; State Prison, \$250; total, \$201.

During the year all the State correctional and charitable institutions were visited except the St. Peter's Hospital, the Soldiers' Home, and the State Reformatory.

The Fergus Falls Hospital was found in excellent condition. The Rochester Hospital for the Insane was thoroughly inspected and found in excellent condition.

The population of the Soldiers' Home continues to decrease. The number of inmates in the home has been as follows: Sept. 30, 1888, 62; 1889, 121; 1890, 118; 1891, 110.

May 31, 1889, the number reached 141. This number was not again reached until Feb. 28, 1891, when it was 144. After that time it declined until Aug. 31, 1891, when it was 109, the lowest number reported since December, 1888. The finances of the home are in good condition. There was a surplus of \$3,865 at the beginning of the fiscal year, which had increased to \$8,795 at the close of the year.

The new dormitory building for the School for the Deaf is progressing, but will not probably be ready for occupancy before January, 1892. The number of pupils is larger than ever. The

new building will allow vacating the attic dormitories.

The School for Dependent Children appeared to be in excellent condition. The new wing for the little children is approaching completion, and is admirably planned. The cottage for the residence of the State agent was under way.

The Reform School is in process of removal. The new plant is one of the finest, if not the very finest, in the United States.

The Reformatory has reached a satisfactory financial basis. Beginning the year with a deficit of \$14,217, it closed with a surplus of \$10,152. Besides this, unsold stone is estimated at \$15,000. During the year 78 inmates have been released, of whom 49 remain under its guardianship.

The State Prison runs quietly, and is to all appearance admirably conducted. The managers are negotiating for an additional binding-twine plant, being encouraged by the success of the binding-twine business thus far.

The new solitary prison has been opened, and is a decided improvement upon the old one.

The two years' prison contract expired Sept. 30. No bid was received, except that of the Minnesota Thrasher Company, which was 45 cents a day for half the convicts. The bid was rejected as being too low, and a new contract was finally closed at 55 cents a day.

The Cottonwood County poorhouse has proved an expensive nuisance, and the commissioners are seriously discussing the sale of the farm.

Goodhue County poorhouse proves to be thoroughly satisfactory.

Redwood County has a poor farm of 170 acres in the northeastern corner of the county, which served an admirable purpose in relieving the county of the care of a class of paupers who became self-supporting when required to go to the poorhouse.

The Renville County commissioners purchased a fine farm of 320 acres, with a large stock barn at a cost of \$8,000. Specific reports on the different county jails were included in the annual report of the commissioners.

Minnesota at the World's Fair.—The board of managers of the World's Fair for Minnesota includes: D. A. Montfort, J. J. Furlong, A. L. Ward, George N. Lamphere, M. B. Harrison, and L. P. Hunt. Minnesota has been assigned a site for a building. It is about 175 feet square, and is on a corner of two avenues. It is in the improved portion of Jackson Park, near a lovely artificial lake, and only a short distance from Lake Michigan, with magnificently adorned landscape between it and the lake. A legislative appropriation of \$50,000 has been made and further funds are being collected, so that Minnesota may erect a building and make a display equal to her importance in the sisterhood of States.

Agricultural Experiment Station.—The biennial report of the State Agricultural Experiment Station shows that numerous improvements have been made in the buildings and a dairy department equipped, in which there is an increasing interest and demand for instruction. Much attention was paid to experiments in the use of fertilizers, in the hope of discovering what fertilizers were most available and effective in

the State. Experiments were continued with a great variety of grasses, many varieties of corn, with leguminous plants and root crops. Mixtures of oats and peas of different varieties and of different relative quantities were sown under similar and unlike conditions. Root pruning, listing, deep tillage and surface tillage for corn, together with tests of varieties were continued. In the line of animal industry several kinds of work were undertaken and are progressing satisfactorily, giving promise of results of great value. A valuable stock of hogs was secured. Sheep feeding was made a subject of experiment.

White Pine.—There are really but three white pine States—Minnesota, Wisconsin, and Michigan—and for census purposes statistics of the standing pine owned by manufacturers and the amount of State holdings were collected. The figures of the latter were furnished by the State Auditor, but there can be only an estimate of the standing pine owned by the Government, as the figures of the land office are inconclusive.

In Minnesota the manufacturers have 10,000,000,000 feet of building pine, the State has 20,000,000,000 feet, and the Federal Government is estimated to have 20,000,000,000 feet, a total of 50,000,000,000 feet, more than the holdings of all manufacturers in the three States.

The statistics show that Minnesota has advanced from third place in 1880 to first place in 1890, with double the amount of manufactured product. It is the opinion of the expert that another lumber-manufacturing city will soon have to be built in Minnesota on the upper Mississippi, in order to accommodate needs of the manufacturers. There is not room in Minneapolis to manufacture any more, and with the immense pine forest yet untouched, there is enough to build another lumber city and also to keep Minneapolis going. The output of lumber from Minneapolis, Minn., amounted to \$6,584,456.

Crops.—During August a report was prepared by the State Auditor from returns received by him from the county auditors of the State. These reports were quite elaborate, and showed the acreage, number of bushels, and yield per acre for 1890, and the acreage for 1891 in the various counties. The wheat acreage in 1890 was 2,078,787, yielding 40,298,142 bushels of grain, but this year the acreage is 3,359,983, which, estimated at 20 bushels an acre, a fair average for this year, will yield 67,193,660 bushels of wheat. The corn crop was estimated at 21,907,648 bushels, taking an average of 28 bushels to the acre; the oats about 51,000,810, on an average of 35 bushels to the acre, and the flax 5,598,144 bushels, an average of 12 bushels.

The following gives an estimate of the acreage sown in this State to the three great crops—corn, oats, and flax—by counties: The total acreage in corn is 782,416, an increase of 55,923 acres over 1890. The acreage in oats is 1,457,166, giving an increase of 117,179 acres over 1890. The flax acreage is 466,512, an increase of 66,371 acres over 1890.

The figures issued by the Agricultural Department at Washington credit Minnesota with a wheat acreage in 1891 of 3,143,917, bushels 55,333,000, value \$45,159,692; corn 814,556, bushels 21,586,000, value \$8,418,436; oats 1,415,080, bushels 52,015,000, value \$14,044,163.

Railroad and Warehouse Commission.

Since the creation of the commission the records demonstrate that much has been accomplished of direct benefit to the general public, as the gradual but material reduction in transportation rates for freight and passengers, and as requiring of the railroad companies equal consideration for all classes of shippers. Competition, improved methods in handling trains, newer and better machinery, lower grades, and the reduced cost of transacting business, aided by a growing traffic, have also assisted in making lighter the burdens of transportation. The commissioners regard the issuing of free passes as now practiced in Minnesota as an unjust discrimination against every passenger that pays, and thus opposed to the spirit of the act passed for the regulation of common carriers; also that it is a fruitful source of corruption: that it is injurious alike to public and private interests, and to the interest of the companies themselves, and that it is one of the chief obstacles in the way of proper and necessary reform in railway management and the control thereof under authority of the State. The present law regulating common carriers especially permits the issuance of passes for the free transportation of passengers, although all other discrimination is prohibited under severe penalties.

The decision rendered in March, 1891, by the Supreme Court of the United States, holding that certain provisions of the act of 1887 regulating common carriers are not in harmony with the Federal Constitution, will make necessary some changes in the Minnesota laws in this regard. It was understood when the law of 1887 was enacted that while the railroads were entitled to receive reasonable rates for service rendered, the Legislature was the sole arbiter as to what rates were reasonable. It was also admitted that this power could be delegated by the Legislature to a board of commissioners. With this in view, the law of 1887, as interpreted by the Supreme Court of the United States, delegated this power to the Board of Railroad and Warehouse Commissioners, and provided no means for a review of its action. The court of last resort has determined that action upon such matters is not final either in a commission or in the Legislature itself. The power of the Legislature to make reasonable rates for common carriers is not denied, but whether a given rate so made is reasonable is a judicial question, and must be settled as other matters of law and fact are determined, through the medium of the courts.

Political.—Under the Apportionment act of Congress approved Feb. 7, 1891, which fixes the number of members of the House of Representatives after March 3, 1893, Minnesota's delegation was increased from 5 to 7, and the State has been redistricted as follows:

1. The counties of Houston, Fillmore, Mower, Freeborn, Waseca, Steele, Dodge, Olmsted, Winona, and Wabasha.

2. The counties of Faribault, Martin, Jackson, Nobles, Rock, Pipestone, Murray, Watonwan, Blue Earth, Nicollet, Brown, Redwood, Lyon, Lincoln, Yellow Medicine, Lac Qui Parle, Chippewa, and Cottonwood.

3. The counties of Goodhue, Dakota, Rice, Scott,

Le Sueur, Sibley, Carver, McLeod, Renville, and Meeker.

4. The counties of Ramsay, Washington, Chicago, Isanti, and Kanabec.

5. The county of Hennepin.

6. The counties of Cook, Lake, St. Louis, Itasca, Carlton, Aitkin, Crow Wing, Pine, Mille Lacs, Anoka, Sherburne, Wright, Stearns, Benson, Morrison, Todd, Cass, Wadena, Hubbard, and Beltrami.

7. The counties of Kittson, Marshall, Polk, Norman, Clay, Wilkin, Traverse, Big Stone, Swift, Kandiyohi, Stevens, Pope, Douglas, Grant, Otter Tail, and Becker.

MISSISSIPPI, a Southern State, admitted to the Union Dec. 10, 1817; area, 46,810 square miles. The population, according to each decennial census since admission, was 75,448 in 1820; 136,621 in 1830; 375,651 in 1840; 606,526 in 1850; 791,305 in 1860; 827,922 in 1870; 1,131,597 in 1880; and 1,289,600 in 1890. Capital, Jackson.

Government.—The following were the State officers during the year: Governor, John M. Stone, Democrat; Lieutenant-Governor, M. M. Evans; Secretary of State, George M. Govan; Treasurer, J. J. Evans; Auditor, W. W. Stone; Attorney-General, T. Marshall Miller; Superintendent of Public Instruction, J. R. Preston; Railroad Commissioners, J. F. Sessions, Walter McLaurin, and J. H. Askew; Chief Justice of the Supreme Court, Thomas H. Woods; Associate Justices, J. A. P. Campbell and Timothy E. Cooper.

Finances.—The balance in the State treasury on Jan. 1, 1890, after deducting the sums embezzled by ex-Treasurer Hemingway, was \$276,835.90; the total receipts for the year following were \$1,251,693.64, and the total disbursements were \$1,210,346.22, leaving a balance on Dec. 31, 1890, of \$318,183.32. For the year 1891 the total receipts were \$1,273,845.42; the total disbursements, \$1,178,632.37; and the balance on Dec. 31, 1891, \$413,396.37. The chief sources of revenue for 1890 were the following: From the *ad valorem* State tax of 4 mills, \$572,134.45; from the privilege taxes, \$201,408.28; from fines, \$62,573.74; from retail licenses, \$161,450. For 1891 the receipts from the State tax were \$606,811.42; from the privilege taxes \$174,350.37; from fines, \$83,923.62; from retail licenses, \$157,812.50.

The total State debt on Dec. 31, 1891, including interest due, is reported by the Governor to amount to \$3,375,583.59. Of this sum, \$827,000.81 represents only a nominal debt, which probably never will be paid, and \$1,606,312.60 represents a debt of which the State is pledged to pay the interest and not the principal, leaving \$942,270.18 as the actual payable State debt. The total assessed valuation of property in the State was \$165,847,334 in 1890 and \$167,109,303 in 1891, in both of which years a State tax of 4 mills on the dollar was levied.

Railroads.—There were built in Mississippi during the year ending June 30, 1890, 102.57 miles of railroad, and during the year ending June 30, 1891, 42.83 miles. The total mileage in the State at the latter date was 2,456.45 miles.

Population by Races.—The following table shows the white and colored population of the State in 1880 and 1890, as reported by the Federal census:

COUNTIES.	WHITE.		COLORED.	
	1890.	1880.	1890.	1880.
Adams.....	6,054	4,796	19,973	17,947
Alcorn.....	9,543	9,869	8,571	4,409
Amite.....	7,509	5,494	10,689	8,510
Attala.....	12,666	11,659	9,523	8,260
Benton.....	5,578	5,777	5,007	5,246
Bolivar.....	3,280	2,684	26,784	15,958
Calhoun.....	11,153	10,191	8,540	8,800
Carroll.....	8,075	7,881	10,698	9,961
Chickasaw.....	8,435	7,696	11,496	10,209
Choctaw.....	8,180	6,587	2,717	2,498
Claborn.....	8,419	8,910	11,005	12,858
Clarke.....	7,717	7,181	8,106	7,828
Clay.....	5,852	5,255	13,054	12,110
Coahoma.....	2,162	2,412	16,161	11,155
Copiah.....	14,602	13,101	15,680	14,442
Covington.....	5,805	4,034	2,984	1,953
De Soto.....	6,862	7,581	17,319	15,843
Franklin.....	5,454	4,852	4,964	4,871
Greene.....	2,923	2,881	945	735
Grenada.....	3,950	3,286	11,024	8,881
Hancock.....	3,758	4,685	2,586	1,764
Harrison.....	9,108	5,749	8,870	2,146
Hinds.....	10,685	11,675	28,577	32,279
Holmes.....	6,980	6,911	29,988	20,238
Issaquena.....	692	826	11,628	9,174
Itawamba.....	10,695	9,655	1,018	1,108
Jackson.....	7,510	5,124	8,440	2,482
Jasper.....	7,318	6,214	7,288	5,681
Jefferson.....	8,542	4,260	15,409	13,051
Jones.....	7,027	8,469	1,295	859
Kemper.....	7,845	7,100	10,084	8,587
Lafayette.....	11,595	11,885	9,858	10,286
Lauderdale.....	14,509	9,959	15,134	11,588
Lawrence.....	6,236	4,987	6,082	4,478
Leake.....	9,925	8,104	5,048	4,660
Lee.....	12,341	12,656	7,699	7,814
Leflore.....	2,450	2,280	14,414	7,997
Lincoln.....	10,216	7,701	7,696	5,842
Lowndes.....	5,940	5,588	21,105	22,656
Madison.....	6,024	5,946	21,297	19,907
Marion.....	6,478	4,450	8,054	2,451
Marshall.....	9,593	10,992	16,508	18,888
Monroe.....	11,980	10,551	18,792	18,001
Montgomery.....	7,372	6,671	7,085	6,677
Neshoba.....	8,820	6,555	2,175	1,768
Newton.....	10,082	8,428	6,192	4,686
Noxubee.....	4,615	5,802	22,728	24,572
Oktibbeha.....	5,585	5,109	12,109	10,869
Panola.....	9,064	9,521	17,918	18,880
Pearl River.....	2,298	.....	659	.....
Perry.....	4,569	2,857	1,887	1,070
Pike.....	10,581	8,572	10,672	8,112
Pontotoc.....	10,529	9,609	4,411	4,249
Prentiss.....	10,767	9,737	2,912	2,421
Quitman.....	888	592	2,897	815
Rankin.....	7,454	7,198	10,467	9,559
Scott.....	6,917	6,683	4,700	4,182
Sharkey.....	1,225	1,405	7,189	4,898
Simpson.....	6,164	4,994	8,974	8,014
Smith.....	8,889	6,452	1,746	1,636
Sumner.....	.....	7,289	.....	2,295
Sunflower.....	2,505	1,764	6,875	2,897
Tallahatchie.....	4,974	4,168	9,857	6,757
Tate.....	8,398	9,094	10,558	9,627
Tippah.....	9,981	9,892	2,970	3,065
Tishomingo.....	8,289	7,611	1,013	1,163
Tunica.....	1,218	1,256	10,986	7,205
Union.....	11,569	9,932	4,087	8,098
Warren.....	8,643	8,717	24,516	22,516
Washington.....	4,669	3,473	35,709	21,861
Wayne.....	5,769	4,971	4,041	3,770
Webster.....	9,084	.....	3,026	.....
Wilkinson.....	3,864	8,570	13,727	14,243
Winston.....	6,977	6,118	5,072	8,927
Yalobusha.....	7,618	7,581	9,011	8,116
Yazoo.....	8,515	8,498	27,873	25,842
The State.....	539,708	479,393	747,720	650,291

There were 122 Chinese, 1 Japanese, and 2,054 Indians in the State in 1890.

Education.—During the past two years the enrollment of educable children has increased nearly 6,000, and the increase in average attendance falls but little below that number. For the same period the increase in number of teach-

ers employed is 431, and in salaries \$59,590. Within the past two years more than 700 school buildings have been erected. The estimated value of public-school buildings in the State is \$1,129,615.

Nearly every city or town in the State having a population of 1,000 or more is a separate school district, and maintains a public school for eight or nine months in the year. In addition to these, many high schools have sprung up.

At the State University during the school year 1890-'91 there were 217 students in the collegiate department and 23 in the law department; at the Agricultural and Mechanical College there were about 275 students; at the Industrial Institute and College (for girls), 307 students; and at the Alcorn Agricultural and Mechanical College (for colored), 238 students. The State Normal School at Holly Springs has an enrollment of about 200 students.

Charities.—The accommodations of the State Lunatic Asylum at Jackson were increased during the year by the erection of a new building for the colored insane, which will accommodate 400 patients. The 75 colored patients in the East Mississippi Insane Asylum were transferred to it on Dec. 19, making a total of 550 patients in the Jackson institution. The buildings at Jackson will now accommodate about 825 patients.

At the East Mississippi Asylum, at Meridian, there has been a daily average of 246 patients for the two years 1890-'91. There are also many insane in the county jails and elsewhere.

At the Institution for the Deaf and Dumb there were 81 pupils at the close of the year. The cost of the institution to the State in 1891 was about \$18,000.

Penitentiary.—On Dec. 3 there were 543 prisoners at the State Penitentiary, of whom 54 were white and 489 colored. The average number during 1890 was 456, and during 1891, 509. The institution is now managed by a State Board of Control, which directly superintends the labor of prisoners. During 1890 the carriage-making industry employed a considerable number of prisoners within the walls, while the remainder were engaged in farming. During 1891, in addition to carriage-making and farming, a portion of the prisoners were making brick for the addition to the State Lunatic Asylum at Jackson. The Penitentiary is not only self-supporting, but during 1890 the State derived from it an income of \$19,000, and during 1891 an income of \$29,295.44.

Pensions.—Since 1888, the first year in which the State appropriated money to pension Confederate soldiers, the list of pensioners has increased from 1,000 to 1,284, in 1890. The first year the fund appropriated was \$21,000, and each pensioner received \$21; in 1889 the number increased, but the appropriation was the same, and the amount paid each was \$17.85. For 1890 the fund was increased to \$30,000, and the pensioners obtained \$23.36 each.

Confederate Monument.—Early in June a monument to the Confederate dead of Mississippi was unveiled at Jackson in the presence of a large concourse. United States Senator E. C. Walthall delivered an oration on the Confederacy, and an address upon the life and character

of Jefferson Davis was made by ex-Gov. Robert Lowry. The monument was erected at a cost of \$20,000, half of which was appropriated by the State Legislature, and half was raised by a committee of ladies. The shaft is placed in a conspicuous position on the grounds surrounding the State Capitol, and contains, in a chamber at its base, a statue of Jefferson Davis.

Political.—The only State officers to be chosen this year by popular election were three railroad commissioners. At a State convention of the Democratic party, at Jackson, on July 16, the commissioners then in office—J. F. Sessions, Walter McLaurin, and J. H. Askew—were renominated. A declaration of party principles was adopted by this convention, of which the following is a portion:

The farmers have been unduly taxed; they have been made the bearers of the burdens imposed for the benefit of the manufacturers, while the prices of their chief products are fixed by the prices in Europe. The protective system has been so arranged as to restrict the markets and thus reduce the prices of such products, and at the same time enhance the prices of what the farmer has to buy.

We believe that gold and silver should be coined on the same terms and conditions, and when the Government shall cease to discriminate between them they will freely circulate side by side, and be equally useful and acceptable. We also believe there should be an additional issue of treasury notes, interchangeable with coin, sufficient to transact the business of the country, and to relieve the present financial depression.

We demand liberal appropriations for the improvement of our rivers and harbors.

We are opposed to what is known as the Sub-treasury Scheme, as violative of the time-honored principles of the Democratic party, and a violation of the Democratic idea of proper construction of the Constitution, and we regret that the discussion of the same has been thrust into the politics of our State.

No party ventured to place an opposition ticket in the field, and at the November election the candidates above named received all the ballots cast. The vote for McLaurin was 31,986; for Sessions, 31,552; for Askew, 31,475. At the same election members of the General Assembly of 1892 were chosen. Forty-five Senators and 133 Assemblymen were elected, all regular Democrats, except 3 Republicans, 1 Greenbacker, and 7 Independents. The "understanding" clause of the new State Constitution was not rigidly enforced in the registration of voters preceding this election.

MISSOURI, a Western State, admitted to the Union Aug. 10, 1821; area, 69,415 square miles. The population, according to the census of 1890, was 2,679,184. Capital, Jefferson City.

Government.—The following were the State officers during the year: Governor, David R. Francis; Lieutenant-Governor, Stephen H. Claycomb; Secretary of State, Alexander A. Le Sueur; Auditor, James M. Seibert; Treasurer, Lon V. Stephens; Attorney-General, John M. Wood, all Democrats; Chief Justice of the Supreme Court, Thomas A. Sherwood; Associate Judges, Francis M. Black, Theodore Brace, Shepard Barclay, James B. Gantt, J. L. Thomas, and George B. MacFarlane; Clerk, Jacob D. Conner, all Democrats; Superintendent of Public Schools, Lloyd E. Wolfe.

Finances.—The balance in the Treasury Jan. 1, 1889, was \$585,499.07; the receipts from all sources during 1889 were \$3,757,851.92; the total receipts in 1890 were \$3,393,513.99; the outstanding warrants charged to the school fund, \$1,996.26; the disbursements in 1889 were \$4,002,096.45, and in 1890 \$2,832,280.92, leaving a balance Jan. 1, 1891, of \$904,483.87. In the State revenue fund the balance on Jan. 1, 1889, was \$15,937.94; the receipts for the biennial period were \$4,273,399.51, and the expenditures \$4,092,401.78, leaving a balance Jan. 1, 1891, of \$180,997.73. The balance in the sinking fund Jan. 1, 1889, was \$330,025.78. In 1889 \$742,000 was paid out of this fund to redeem maturing bonds, and in 1890 \$218,000. In 1890, also, \$33,840 was paid for the purchase of 33 unmatured bonds; the balance Jan. 1, 1891, was \$453,168.49.

The disbursements for the support of public schools in 1889 were \$843,320.19, and in 1890 \$861,386.40, of which \$1,331,605.99 were the one third of the State revenue applied to school purposes, and \$371,865 were the receipts from interest on certificates of indebtedness. The disbursements for the support of the State University during the biennial period were \$55,967.08; the moneys in this fund arise from the proceeds of the lands granted by acts of Congress in 1818 and 1820 for the establishment of "a seminary of learning." For the School of Mines and Metallurgy \$20,000 was expended during the two years, and for the normal schools \$76,733.

The sums paid out for support of the three lunatic asylums, including repairs and improvements, was \$250,390.58; for the Deaf and Dumb Asylum, \$181,481.52; and for the Blind Asylum, \$51,672.23.

The Missouri Penitentiary cost the State \$114,370.46; the Reform School for Boys, \$22,638.51; and the Industrial Home for Girls, \$17,103.97.

The assessed valuation of real and personal property, including railroad, bridge, and telegraph property, for 1889, was \$807,551,460.29, and for 1890 \$862,772,099.44. Of this, the railroad, bridge, and telegraph property amounted in 1889 to \$57,420,321.20, and in 1890 to \$60,322,959.44. The State revenue tax was $\frac{1}{10}$ of 1 per cent.; the State interest tax, $\frac{1}{10}$ of 1 per cent.

Education.—For the school year ending in 1890 the county commissioners reported as follows: White children of school age enumerated, 810,707; colored children of school age, 48,047; total, 858,754; white children enrolled in the public schools, 587,510; colored children enrolled, 32,804; total enrollment, 620,314; average number of pupils attending each day, 384,627; whole number of teachers employed, 13,785, of whom 6,123 were male and 7,662 female, 13,065 white and 720 colored; average monthly salary of teachers, \$41.94; number of schools in operation, 9,712, of which 9,205 were white and 507 colored; total number of school-rooms occupied, 12,574; number of pupils that can be accommodated, 701,947; average cost per day for tuition on enrollment, 4-9 cents; average cost per day for tuition on average attendance, 7-9 cents. The value of school property in the State was \$12,194,381. The receipts and expenditures for the year, as reported by the county commission-

ers, were as follow: Amount on hand July 1, 1889, \$1,413,326.74; receipts during the year for tuition fees, \$29,848.44; from public funds, \$1,487,515.98; from railroad tax, \$204,747.72; from loan voted, \$582,787.10; from local taxation, \$4,214,237.18; total receipts, \$7,932,463.16; amount paid for teachers' wages, \$3,472,225.26; for incidental expenses, \$665,928.63; for salaries of district clerks, \$213,922.54; for purchase of sites, erection of school-houses, and furnishing them, \$704,103.66; for repairs and rent, \$350,280.08; for defraying indebtedness (sinking fund and interest), \$223,608.64; for library, \$27,801.71; total expenditures, \$5,657,870.52; amount on hand July 1, 1890, \$2,274,592.64. The number of volumes in the district libraries was 130,880. The number of trees planted on Arbor Day was 9,903.

The permanent school funds were as follow: Total amount of State school fund in State certificates and cash in the treasury to the credit of the school fund, \$3,140,853; university or seminary fund, \$540,000; county school fund \$3,687,565.43; township school fund, \$3,331,055.95; district-public-school fund, \$48,407.61; total, \$10,747,881.99.

The total number of students enrolled in the preparatory and college departments of the State University at Columbia was 245, and in the professional courses 187. Of the latter, 9 were in the agricultural, 50 in the normal, 69 in the law, 17 in the medical, 38 in the engineering, and 4 in the commercial department.

The semi-centennial anniversary of the laying of the corner-stone of the university was celebrated July 4, 1890. The connection that had existed for several years between this institution and the Missouri Medical College at St. Louis was severed in 1890. Dr. A. W. McAlester was appointed dean of the medical department, and a thorough three years' course was adopted. The General Assembly enacted a law in 1889 by which the military department of the State University was made the Missouri State Military School. The corps of cadets is to consist of one from each senatorial and representative district in the State, each to be an actual resident in the district and appointed by the Senator or the Representative in August of each year. These cadets pay no tuition fees, but only laboratory and incidental fees in any department of the university where they may be matriculated, and are reckoned a part of the National Guard of the State, having its military organization and subject to its rules.

By a congressional land grant the State received about 300,000 acres for the endowment and maintenance of a college of the mechanic arts. All but about 60,000 acres has been sold, and from the proceeds \$312,000 invested in State certificates at 5 per cent. The State has designated Columbia as the site of the college, but has so far failed to provide the buildings to which the congressional grant can not be applied.

The enrollment at the State normal schools was as follows: At Kirksville, 520 pupils; at Warrensburg, 744; at Cape Girardeau, 349. The Lincoln Institute for training colored teachers, at Jefferson City, enrolled 52 pupils in the normal department out of a total of 183. About 7,591 were reported enrolled in private schools.

Legislative Session.—The thirty-sixth Legislative session began on Jan. 7, and adjourned on March 24. A vote was taken Jan. 27 for United States Senator. In the Senate George G. Vest received 24 votes; Samuel W. Headlee, 7; and O. D. Jones, 1. In the House Vest received 106 votes; Headlee, 25; and Leverett Leonard, 8. The following day a joint session was held, the vote was verified, and Senator Vest declared his own successor. Gov. Francis sent in his message Jan. 9. Among his recommendations is one for the restoration of the Board of Fund Commissioners, abolished by the thirty-fifth General Assembly. Under the head of legal matters, the Governor calls attention to the claim of the State against the St. Louis and San Francisco Railroad for \$300,000, being the purchase price for that railroad, which the State had sold on March 17, 1868. Suit was instituted in the circuit court of St. Louis Jan. 30, 1889, the day before the ten-year period of limitation would have expired, for the principal and 6 per cent. interest from maturity. The defendant filed a demurrer to the State's petition, but it was overruled, and the case set for trial at the February term of the St. Louis circuit court. The attorneys of the railroad have notified the State of their intention to take depositions in New York and various other cities, beginning Jan. 10, 1891.

In regard to education the Governor said:

The last Legislature set aside one third of the revenue for the support of the public schools, and, in addition, appropriated \$188,388 for the State University and State normal schools, making a total appropriation for the benefit of education for the years 1889-'90 of \$1,514,988.99. In addition to this sum the schools derived \$427,520 as interest on the public-school fund and seminary fund, making a total of \$1,942,508.99 paid out of the State treasury for the promotion of education in Missouri during the past two years. This is independent of the money raised in the school districts of the State by local taxation and from county and township funds, which, for the two years 1889 and 1890 aggregated \$8,646,480.23 a grand total of \$10,407,656.20 paid by the people of Missouri for school purposes during the past two years.

Among the bills passed by the Legislature were the following:

- Prohibiting the alien ownership of land.
- Requiring mine operators to give employes noon hour above ground.
- Extending the Australian ballot law to all parts of the State.
- For the assessment of surplus funds and undivided dividends of banks.
- Prohibiting pool selling and book-making. Making it a felony to blacklist employes.
- For endowment of the State University.
- Requiring original-package dealers to take out dram-shop license.
- Appropriating \$150,000 for a State exhibit at the World's Fair.
- Fixing the legal contract rate of interest at 8 per cent.
- Providing for the forfeiture of principal and interest in cases where exceeding 10 per cent. interest is charged.
- Appropriating one third of the revenue for school purposes.
- Requiring foreign corporations to become incorporated under the State law before doing business in the State.
- Taxing sleeping-car companies \$2 on the \$100 of gross earnings.

Appropriating \$30,000 for support of the State militia and university cadets.

Authorizing independent parties to avail themselves of the ballot law without reference to numerical strength.

Restoring the Board of Fund Commissioners.

The constitutionality of the law against pool selling was disputed, but the Supreme Court, Nov. 16, held it to be constitutional.

The Noland Defalcation.—This case (see "Annual Cyclopædia" for 1890, p. 563) was brought to trial in May before Judge Burgess, a part of whose instructions to the jury was as follows: "Before you can convict the defendant you must believe beyond a reasonable doubt, from the evidence in the case, that he converted the public money to his own use, with the intent at the time of converting to retain said money and deprive the State of it." The jury stood six to six, and were discharged. On the next trial, in July, the jury rendered a verdict of guilty, fixing the punishment at two years in the Penitentiary. Motions were made for a new trial before Judge Burgess, the affidavits affirming that some members of the jury were incompetent by reason of intoxication, and some on account of opinions previously formed. The motion was denied. Appeal was then taken to the Supreme Court. There are still other indictments against the ex-Treasurer, one for forgery and the other for loaning the State's money.

The Confederate Home.—This institution, near Higginsville, was opened in April, and though not ready to be operated to its full capacity, has provision for the support of fifteen inmates.

Geological Survey.—An act of the Legislature approved May 23, 1889, created a Bureau of Geology and Mines; the board was organized in the following August, and Arthur Winslow was elected State Geologist, entering on the discharge of the duties in September. His biennial report, sent to the Legislature in January, 1891, shows that the cost of the survey to the end of 1890 was \$16,148.10. Monthly reports have been made, and bulletins issued, giving results of the work in special departments as it progressed. Topographic maps have been made, and specimens to the number of 2,300 collected and classified. Work in the coal fields had been done by earlier surveys, and some attention had been given to the zinc and lead deposits. The present survey has gone more thoroughly into these subjects, and has taken up in addition the clays, building stones, limes, sands, and cements, and the mineral waters, of which no scientific and critical examination had been made; 1,574 square miles have been studied and mapped with reference to the distribution of the granites, syenites, and porphyries. A preliminary report on the coal deposits gives results of the field work prosecuted during the years 1890-'91.

With reference to the value of coal and coal lands, the report says it "must remain indeterminate until the question of the amount of the coal is settled. With a bed 2 feet thick, the value of the 2,500 tons of available coal per acre, at \$1.30 per ton, is \$3,250. The value of the product of a square mile of such coal is \$2,080,000. If we allow a profit of 10 cents per ton, the net value of the coal from an acre of

land is \$250, and for 40 acres of such land it is \$10,000.

The production of lead for the year ending June 30, 1891, was valued at \$2,411,399, that of zinc at \$2,673,073, and that of iron at \$331,665.

Charities.—The amount appropriated to the support of eleemosynary institutions during the biennial period was \$623,458. The School for the Blind at St. Louis cost the State during the two years \$59,209.46 for an average of about 100 pupils. The committee appointed to visit and examine the State institutions reported that in their opinion a suburban location would be far preferable to the present one, which is now in the heart of the city, though it was far out in the suburbs in 1855, when the school was organized. The location has so increased in value that it would bring a sum much greater than would be needed for new grounds and modern buildings. The School for the Deaf and Dumb, at Fulton, had special appropriations, aggregating \$93,000, from the thirty-fifth General Assembly, and asked for \$11,750 more from the thirty-sixth; \$70,000 was appropriated for the current expenses for the last biennial period, and an increase to \$95,250 was asked for the next. The appropriation for salaries was \$24,500; 123 new pupils were added, the whole number being 355. The average *per capita* for current expenses was \$197.50; for salaries and wages, \$97.50.

The appropriation for the State Lunatic Asylum, at Fulton, was \$40,000 for support, \$20,000 for improvements, and \$19,200 for salaries. The average number of inmates was 550. For the one at St. Joseph the total appropriation was \$87,500, of which \$56,764.37 was expended. The number admitted during the two years was 340, the total number under treatment 819. The one at Nevada had admitted 438 and discharged 306, of whom 145 were restored and 43 improved. The sum received from the State was \$93,648.88.

MOLTKE, HELMUTH KARL BERNHARD, Freiherr von, a German soldier, born in Parchim, Mecklenburg, Oct. 26, 1800; died in Berlin, April 24, 1891. His father, Fritz von Moltke, a retired captain in the Prussian service, married Henrietta Paschen, the only daughter of a wealthy Hamburg merchant and Prussian Councillor of Finance, and purchased an estate in Priegnitz, and afterward one in Mecklenburg, his native province. Helmuth, the third of seven sons, was born while his parents were visiting the uncle for whom he was named. Baron von Moltke, the father, sold his land in 1803, and retired to Lübeck, where his house was sacked by the French in 1806. Shortly afterward he bought an estate in Holstein, near Kiel, but lost the buildings and granaries a year later through fire, and when the maternal grandfather died soon afterward, after the payment of numerous legacies, little was left of the fortune, depreciated as it was through the war. The property had to be sold, and the father was compelled to return to military life, taking service in the Danish army, in which he rose to be a lieutenant-general. He entered Helmuth and his brother Fritz in the cadet school at Copenhagen in 1811, and while being trained in the rudiments of the military profession they were subjected to harsh treatment and privations. The uncle, Helmuth von Moltke, as a captain of Mecklenburg troops in the French

service, was killed in Russia at the passage of the Beresina in 1812. In 1818 young Helmuth passed his examination as candidate for a degree at the head of his class. He served for a year as a page at court, as the rules of the Danish service required, and in March, 1819, was appointed a lieutenant in the Oldenburg regiment. He won the good-will of his superiors by his attention to duty and zeal for knowledge. Desiring to serve for a time under the Prussian flag in order to complete his training, he asked the King for an advance of pay, as he was very poor. His colonel, the Duke of Holstein, afterward King of Denmark, gave him leave of absence and good recommendations; but the King, whom he promised to repay by acquiring such knowledge and capacity in the Prussian service as would enable him to serve Denmark more efficiently, refused to pay the expenses of any Danish officer seeking service abroad, and owing to this refusal the future strategist of the Schleswig-Holstein campaign remained in the Prussian service, which he entered in 1822. He became a second lieutenant in the infantry regiment stationed at Frankfort-on-the-Main, and did regimental duty for a short time, after which he studied in the military academy at Berlin and in the school at Frankfort-on-the-Oder, and applied himself so assiduously to the practice and theory of the military art that in 1832 he was assigned to duty on the general staff. He took part in the topographical survey of Silesia and Posen. About this time he published a pamphlet entitled "Holland and Belgium," discussing the politico-military aspects of the secession of Belgium from the Netherlands. In 1835 he obtained leave of absence to visit the East, and was presented to the Sultan Mahmoud, who asked him to remain in order to assist Chosref Pasha in reorganizing the Turkish army on the Prussian system. Willing to oblige the Sultan, the King of Prussia gave him permission. When Mehemet Ali, Viceroy of Egypt, invaded Syria, Moltke and another officer named Mühlbach went to the headquarters of Hafiz Pasha in the valley of the Euphrates to act as military advisers. In the advance of the Turkish army, 70,000 strong, on Aleppo Moltke commanded the artillery. He advised the commander-in-chief to remain on the defensive until the raw troops could be trained into some degree of efficiency, and when Hafiz Pasha, relying on the enthusiasm roused by the *mollahs*, insisted on making the disastrous attack on Ibrahim Pasha's position, Moltke predicted that on the morrow he would be a general without troops. Returning to Berlin in August, 1839, Moltke was placed again on the general staff, and for his services in the Syrian campaign he received the order *Pour le Mérite*. A year later he was assigned to the staff of the Fourth Army Corps, stationed at Magdeburg. Descriptions of his experiences and observations in Turkey contained in his correspondence with his sister, Frau Burt, wife of an Englishman living in Holstein, were published under the title of "Letters from Turkey, 1835-'39." These letters, which gave him a high literary reputation, had already won the admiration of Mr. Burt's attractive daughter, and this impression ripened into love when they met in her father's house. They were soon engaged, and in April, 1842, a few days

after he had been made a major, they were married. He was much his wife's senior, yet their union, until it was broken by her death in 1868, was remarkably harmonious and affectionate, though they had no children. In 1845 he published a critical work on "The Russo-Turkish Campaign of 1828-'29 in European Turkey," that made a great impression on army circles in Germany and still stands high among the classics of military criticism. In the same year he was appointed aide-de-camp to Prince Heinrich of Prussia, who was living in Rome, where he died in the following year. After his return from the East Moltke had published maps of the Bosphorus and Constantinople and had drawn the map of Asia Minor published in Kiepert's "Atlas," and while in Rome he made a map of the city and its environs. While the prince's corpse was borne on board a man-of-war to Germany, Moltke traveled through Spain and France, leaving the ship at Gibraltar. For the next two years he served on the staff of the Eighth Army Corps, stationed at Coblenz, and then was given charge of a department of the general staff at Berlin, from which he was transferred before long to the post of chief of staff of the Magdeburg corps, being promoted lieutenant-colonel in 1850 and colonel in 1851. In 1855 he was called from this post to become aide-de-camp to Prince Friedrich Wilhelm, the future Kaiser Friedrich. He accompanied this Prince to St. Petersburg and Moscow in 1856, on the occasion of the Czar's coronation. Graphic and unrestrained pictures of court life and observations on the country, the people, and the army, contained in letters to his wife, were printed without leave long afterward in a Danish newspaper, and later in an authorized version in the "Rundschau" and in the form of a pamphlet. He was made a major-general in 1856, and after the trip to Russia he went with the prince to England, and remained with him when he took command of a regiment at Breslau and in 1857 of the First Brigade of the Guards.

When Gen. Reyher died, in 1857, Moltke, one of the youngest general officers in the service, was intrusted with the duties of chief of the general staff, though only provisionally till May, 1859, when he was permanently appointed chief of staff with the rank of lieutenant-general. His preparations for mobilization when the French army advanced through Lombardy convinced the Prussian military authorities that he would uphold and improve the standards set by Scharnhorst, Gneisenau, Müffling, and Reyher, and impelled the French Emperor speedily to conclude the peace of Villafranca. A critical history of the Italian campaign prepared under his direction was the first of a series of valuable military works issued by the Prussian staff. The prospect of a war with a maritime power caused the Prussian Government to commission Moltke to prepare, at the shortest notice, a general scheme of naval defense, which was worked out with the assistance of the best naval and engineer officers. The plans, which involved the creation of a common navy under Prussian direction, were submitted to the Diet at Frankfort, but, the war cloud having passed over, they were not examined for three years, at the end of which a federal commission condemned all the Prus-



Major J. S. M. M. M. M.

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sian propositions. When Wilhelm I, who had acted as Regent since 1857, became King in 1861 he determined on such a reorganization and augmentation of the land forces as would make Prussia a leading military power. With Count Bismarck, the head of the Cabinet, and Gen. von Roon, the Secretary of War, to carry on the fight for the new armaments in Parliament, Moltke proceeded with the organization, which was completed in 1863. In 1864 the war of Prussia and Austria against Denmark on account of the Elbe duchies gave him his chance to prove his strategical ability by drawing up the plan of operations against the army in which he had first learned the soldier's trade. After Field-Marshal von Wrangel had invaded the duchies and taken Düppel by storm, as he had planned, Moltke accompanied the King to the seat of war and directed the concluding operations as chief of staff with Prince Friedrich Karl as commander-in-chief. When it was discovered that England would not interfere, the German army was allowed to deliver a crushing blow to the Danes, which was easy to do with the needle-gun and breech-loading cannon, and to occupy Jutland and the islands too, if necessary, in order to obtain the desired terms, which were the annexation of Schleswig, Holstein, and Lauenburg to Germany. The allies quarreled about the possession of the duchies, and in 1866 Prussia found herself at war with Austria and the majority of the confederated German states. Surrounded by enemies and in danger of having whole sections of the monarchy cut off from the main body, it was necessary for the Prussians to carry the war into the enemy's country. The swift advance of the Prussian army into Bohemia in three columns, such a division being rendered safe by the introduction of the field telegraph, and the crushing defeat of Benedek's army, taken on three sides at Königgrätz, proved to the world the strategical genius of Moltke and the superior organization of the Prussian army, for which he and the general staff received the credit. The position of the Austrians was not known until Prince Friedrich Karl, on the afternoon of July 2, 1866, found a large force posted behind the Bistritz. He determined to attack at daybreak, and asked that a part of the second army should hold the Austrians in check near Josephstadt. Moltke, feeling sure that he could bring up the second army, that of the Crown Prince, although it was wearied out by a week of hard marching and fighting, persuaded the King to countermand the order to rest the armies on the following day, and direct the whole of the second army to attack the enemy on the right flank. When the battle opened eight Austrian corps were found in position, but they were rolled up and routed completely when the Crown Prince came up. After the war of 1866 Moltke and his general staff had the great work of extending the Prussian military system to the other North German states and preparing for the war with France. With a dotation of 200,000 thalers granted by the Landtag, he purchased an estate near Schweidnitz, Silesia, on which to pass his declining years in repose. After his wife's death, in 1868, he withdrew from court festivities and social gatherings more than ever. Although affable to all, polished in manners,

and a man of æsthetic and literary tastes, Baron von Moltke was so sparing of words that he was spoken of in the army as the man who "kept silence in seven languages." The Deputies no longer opposed the plans for strengthening the German army which Gen. von Moltke explained to Parliament, as far as was necessary, in terse and weighty speeches, as he had been elected Deputy for a district in East Prussia.

When the French war broke out the preparations had been so complete, down to the minutest details, that a rapid concentration of the Prussian troops on the line of the Rhine prevented the invasion of German territory. A bold advance of the three German armies, at first extended over a line of 150 miles, drawing together after the affair at Wörth, caused MacMahon to retire, and closed in round Metz, cutting Bazaine's line of retreat to Châlons. These movements were executed with sufficient caution to allow the German armies to support one another in case of a French attack, but promptly enough to give the Germans a great advantage from the beginning. The campaign was not planned, for no one could have foreseen the disorganization of the French defense caused by the concurrent political revolution. The German mobilization in July, 1870, when 370,000 men, with 1,200 guns, in the space of two weeks were massed on the frontier between Coblenz and Germerheim, was a feat that had never been accomplished before, and was a striking manifestation of Moltke's genius as a military administrator. Before March 1, 1871, a million German soldiers were united on French territory, while a quarter of a million more were ready to move to the front, and the movement of these masses of troops was directed by Moltke, whose dispositions were accepted implicitly by the King. He had no chance during the war to exhibit his strategical insight as brilliantly as at Königgrätz. He cautiously swung the Army of the Meuse round to the northwest when Emperor Napoleon and Marshal MacMahon had moved to the north, and in dealing with the various developments that he could not account for on military grounds he was always on guard against surprises. The great augmentation of the German cavalry since 1866 gave him a great tactical advantage over the French commanders, for all the German manœuvres were effectually screened by their cavalry. The efficiency of the military machine perfected by his life's labor was seen in the military results of the war—nearly 400,000 French soldiers carried as prisoners to Germany, 150,000 men disarmed in Paris, 100,000 more driven into Switzerland, 22 fortresses captured, and 1,835 field guns, 5,373 fortress guns, and 600,000 rifles taken. He was made a field marshal after the conclusion of the war, received a dotation from the Parliament, and in 1872 was made a life member of the Reichsrath. Residing in the staff palace in Berlin in winter, and on his estate of Kreisau in summer, he continued to preside over the organization of the German army while it was being successively increased, to give instruction to officers of the staff, and to attend Parliament regularly, in which he represented the West Prussian county of Memel-Heydekrug, and occasionally to speak on military subjects. The Emperor presented

him with the star of the order *Pour le Mérite* with the medallion portrait of Frederick the Great, a distinction usually reserved for royalty, and wished to confer on him the title of prince, which Moltke declined. The simplicity and modesty of his character, the absence of self assertion and personal ambition, were the secret of the affection shown for "Father Moltke" by the officers and soldiers of the army. He chose as his confidential assistant Count Waldersee, who was appointed quartermaster-general, and who succeeded him as chief of staff when he resigned, on Aug. 29, 1888, and was succeeded in turn by Count von Schieffen. When he assumed the office the period required for the mobilization of the Prussian army was estimated to be twenty-one days, and when he asked the young Emperor to relieve him because he could "no longer mount a horse" it could be done in ten days. He still continued to act as military adviser to the general staff, and was appointed President of the National Defense Commission. In politics Gen. von Moltke was a member of the Conservative party, but not a strong partisan. "*Erst wägen, dann wagen*" (first weigh, then wage) was the motto he took when he was made a count. Like Napoleon and Wellington, he did scarcely any regimental duty during his career. He had a reputation for cool calculation and imperturbable *sang froid*, and his courage was well known from the few occasions when, for sufficient reasons and without the least bravado or ostentation, he unhesitatingly exposed his life, as when at Königgrätz he rode down into the first line of skirmishers in the wood of Sadowa, in order to observe the enemy's position.

MONTANA, a Western State, admitted to the Union Nov. 8, 1889; area, 146,080 square miles; population, according to the census of 1890, 132,159. Capital, Helena, which has a population of 23,834.

Government.—The following were the State officers during the year: Governor, Joseph K. Toole; Lieutenant-Governor, John E. Rickards; Secretary of State, Louis Rotwitt; Treasurer, Richard O. Hickman; Auditor, E. A. Kenney; Attorney-General, Henri J. Haskell; Superintendent of Public Instruction, John Gannon; Chief Justice of the Supreme Court, Henry N. Blake; Associate Justices, William H. De Witt and E. N. Harwood. All of these officers are Republicans except the Governor.

Finances.—The balance in the treasury Jan. 1, 1891, was \$187,181.49; the amount of State taxes collected in 1891 was \$331,301.63; the balance on Jan. 1, 1892, was \$315,330.32.

The total assessed valuation of real and personal property in the State for 1891 was \$144,688,752. The rate of taxation was 2½ mills.

The total debt of counties on March 1, 1891, was \$1,830,006.51, a reduction of \$107,143 from the total debt of counties in 1890.

Legislative Session.—The deadlock in the Legislature, caused by the disputed election of representatives in the Thirty-fourth Precinct, in Silver Bow County (see "Annual Cyclopædia" for 1890), continued after the time for opening the session, Jan. 5, 1891, but was finally ended at the close of the month. While the subject of a compromise was under consideration in the third week in January, the Republican House adjourned

and about half the members went home. The half remaining agreed to accept the proposition of the Democrats in case the consent of the absentees could be obtained. This was secured, and a caucus was held on Jan. 26. The main feature of the proposal of the Democrats, namely, to organize with 28 Republicans and 27 Democrats, thus giving the former 3 and the latter 2 of the contested seats, was readily accepted; but differences of opinion arose on the method of organization. It was finally decided to propose that the Democrats should have the officers of the House and a majority of the committees, provided they would open a new journal and hold a new election of officers. These propositions were embodied in a resolution, which also submitted the matter for final settlement to the Senate committee, Messrs. Goddard and Thornton. On Jan. 27 the Democratic House held a caucus to consider the compromise, and adjourned, leaving everything in the hands of the Senate committee. They, however, expressed a willingness either to give the Republicans the majority of one and take for themselves the entire organization, or to take the majority and give the organization to the other party; and also to open a new journal in case such proceeding should be deemed legal by the committee. This committee met and arranged details, and submitted copies of the proposed agreement to the caucuses of the two assemblages, dated Jan. 28, 1891. After setting forth the facts in the case the agreement goes on to provide that the two bodies shall meet at Helena at noon of Thursday, Jan. 29, and proceed to the organization of the House on a plan of which the following are the main features:

1. The House to consist of 25 members of each party about whose election there was no dispute, together with 3 of the 5 Republican contestants, to be chosen by ballot by the 25 undisputed Republican members, and 2 of the Democratic contestants similarly chosen.

2. The House to be called to order at the hour named by the oldest member, and a temporary clerk elected from among the Democratic members. The temporary Speaker to appoint a committee on credentials, consisting of two from each party.

3. After the adoption of their report, the House to adopt a preamble and resolutions, of which the most important provided for depositing the journals of the two assemblages with the Secretary of State, and the opening of a new journal; the payment of mileage and *per diem* for the full period of each session to all members of the first and second Legislatures, including the contestants on both sides, the officers and *attachés* also, if not already paid, to receive pay for the entire period of each session; the Democrats to have a majority, if they so desired, of all the standing committees and the chairmanships of the same; the rules adopted by the Democratic assemblage to be the rules of the House, and in the event of the sickness or death of any member, the relative numbers of the parties to be maintained; and in case of the inability to act of any officers or *attachés*, or of any more being required, the Democrats to elect the new officers or *attachés*.

The resolutions further prescribed the names of officers and *attachés* to be elected by one ballot, leaving a blank only for the name of the Speaker *pro tem*. They were signed by all members of both parties, one only, a Silver Bow Republican, signing under protest. The House accordingly met and organized on Jan. 29, the Committee on Credentials reporting the names of Messrs.

Thompson, Monteith, and Roberts (Republicans), and Messrs. Day and Dussault (Democrats) as members for the contested seats. The report was adopted without dissent, and the oaths of office were administered. There was some difficulty in filling the blank left for the name of the Speaker *pro tem.*, but that of R. G. Humber was finally selected; the ballot was cast, and the Governor and Senate were notified that the House was ready to proceed to business.

In the Senate the question of fines imposed on the Senators who left the State in February, 1890 (see "Annual Cyclopædia" for 1890), was brought up, and the resolution then passed was reported back with instructions that the fines be remitted. The report in accordance with these instructions was adopted by a vote of 8 to 1, 5 being excused from voting.

But thirty-three days remained before the expiration of the session by constitutional limitation, and into these had to be crowded the work that would have occupied the ninety days prescribed for the first Legislature and the sixty of the second. Appropriations were made for salaries for the two years, for the support of State institutions and other debts, and for other purposes, somewhat in excess, it appears, of the present resources of the State. Some time was wasted in fruitless attempts to organize new counties, and more on the selection of sites for State institutions. A bill was passed dividing the newly ceded portion of the Crow reserve between Yellowstone and Park Counties. The Committee on Public Lands reported favorably on a petition to Congress to open Fort Shaw military reservation to homestead settlement.

A bill to extend the term of corporations from 20 to 50 years was vetoed by the Governor, passed over the veto by the Senate, and lost in the House by a vote of 20 to 29. An act to provide for the organization of an irrigation board and the sale of bonds therefor was defeated by a vote of 25 to 24. A bill was passed conferring additional powers on clerks of district courts. This is designed to expedite business in districts where only four terms of court are held each year. Under present laws no steps can be taken to probate a will till the district court convenes, but this act enables the clerk to transact all preliminary business, subject to review by the court.

A bill making it a misdemeanor for a miner or a mine owner to make a contract for more than eight hours' work in a day was defeated. It was supported by nearly 4,000 miners.

A bill to create a railroad commission providing for three commissioners at a salary of \$3,000 a year each, and an assistant at a salary of \$1,500, was lost. Acts concerning the assessment and collection of taxes, and to provide for the selection, appraisal, and sale or lease of State lands were passed. An appropriation of \$75,000 was made for the expenses of the State's exhibit at the World's Fair. The number of commissioners to the fair was raised to sixteen, one for each county.

The following are among other bills passed:

Prescribing the method by which railroad companies shall exercise the right of eminent domain.

Allowing married women to transact business in their own names as sole traders.

Regulating the mining of coal, and for the protection of coal miners.

Amending the law in regard to acquisition of rights of way by railroads, and prescribing the mode of procedure in rights of way for canals, ditches, and flumes.

For the protection of discharged employes, and to prevent blacklisting.

For the prosecution of criminal cases on information.

Requiring railroad companies to pay for damages to stock.

Allowing the raising of the waters of Jefferson river for irrigating and other purposes.

For submitting the question of a constitutional amendment fixing the terms of county commissioners.

Repealing the gag law.

To provide for the election of presidential electors, and of a Representative in Congress.

Attaching certain portions of Northern Pacific and Cooke City railways to Yellowstone County for taxation and judicial purposes.

For a new charter for the city of Helena.

For the filling of vacancies in the Legislative Assembly.

For the submission of the question of the permanent location of the State capital.

To provide for the holding of regular terms of the Supreme Court.

To enable universities and colleges under the patronage of religious bodies to reorganize and change their names, amended.

To provide for the selection, location, appraisal, sale, and leasing of State lands, amended.

To amend an act relating to bounties on stock-destroying animals, amended.

To encourage the production of sugar beets and the manufacture of sugar therefrom, amended.

To fix Sept. 1 as a legal holiday, to be known as Labor Day.

Allowing cities and towns to incur certain indebtedness.

Providing for the election of State and county officers, and for canvassing the votes.

Concerning obscene literature.

Requiring transient merchants to take out licenses.

A bill was also passed providing for the appointment of a commissioner to look after the mineral-land interests of Montana, the office to expire in February, 1893. The commissioner is to have \$3,000 salary, and \$3,000 for expenses. Hon. Martin Maginnis was appointed to the office by the Governor.

Two members of the Legislature died during the year. Hon. Aaron C. Wetter, a member of the constitutional convention and of the first and second Legislatures, from Beaverhead County, died during the session, Feb. 5. Hon. W. J. Penrose, editor of the Butte "Mining Journal" and member of the House, was assassinated in the street in Butte on June 10.

Railroads.—The number of miles of railroad completed was 2,116½; in course of construction, 200. A bill passed Congress in March granting to the Missoula and Northern Railroad Company a right of way through the Flathead Indian reservation. A branch line of the Great Northern to the Neihart camp in the Belt mountains was completed in November. The contract requires the extension of this line nine miles south to the large timber fields, which it is necessary to tap in order to secure material for the extensive prosecution of mining in that section. This brings the road within thirty-five miles of the Castle mines.

One of the greatest works on the extension of the Great Northern is the Wickes tunnel, which will require about 15,000 carloads of granite and will cost more than \$200,000. The granite comes from a quarry fifteen miles south of Helena, on Clancy creek. At Great Falls about \$100,000 is to be expended in the erection of car shops. Great smelters are now in course of construction at that place.

Mineral Lands and Railroads.—An important controversy is in progress in regard to the claim of the Northern Pacific to mineral lands. It was to forward the interest of the State in this matter that the office of Mineral Land Commissioner was created. Following is an extract from his report:

The vast land grant of the Northern Pacific Railway Company stretches from the eastern to the western boundary of the State of Montana in one broad belt, which, including indemnity lands, is nearly 70 miles wide and over 700 miles long. The Congress which created this corporation gave it one half the lands within these limits, carefully excluding all mineral lands, and emphasizing their reservation from the grant by giving to the company indemnity for such lands as might turn out to be mineral. Little prospecting had then been done; very little was known of the character of these lands. All the discoveries of mineral land had yet to be made, the mines upon them to be developed, and these to be finally segregated from the land grant of the company and the company recompensed therefor with other lands not mineral. Nothing would seem to be plainer than the fact that the reservation went with and was part of the grant; and that future exploration, survey, and classification would be necessary to define the non-mineral lands, which would become the property of the company, and the mineral lands, which were reserved to be forever open to the prospector and the miner, under the mining laws of the United States. It was not until later that the audacious claim was set up that lands not then known to be mineral, or known to be mineral at a certain date, were therefore not mineral, and, by consequence, passed to the corporation.

One object of the great grant was to secure an immediate or a rapid construction of the road. The railroad did not, as its charter and its grant contemplated, open up and develop the country for the people; but the people opened up and developed the country for the railroad. For financial reasons its construction was delayed until the Indians had been subdued, the mines, or many of them, discovered, and cities and towns had been builded and farms opened along the line of its route. All that portion of the railroad in this State, and in other States where the mineral lands are in controversy, was delayed in building beyond the time limit fixed for forfeiture both of the charter and the land grant, and but for the successful operations of a financier of great vigor and ability, might not have been built yet. Although the railroad failed in its mission as a prospector and a pioneer, and although its construction was delayed until the country which it was designed to open was so far occupied and developed independently of it that other companies felt justified in building equally good railways without any land grant at all. Congress did not exercise its power of forfeiture, but, recognizing the greatness and the value of the enterprise, permitted the company to complete its line and to acquire its immense grant, which makes it the most extensive land owner in America outside of the General Government itself. A large portion of the lands inside the lines of the grant has never been surveyed or in any way examined, prospected, or classified by the Government. The labor and toil of the voluntary prospector and miner has alone made known which are mineral districts and which are

not. Suddenly the astounding claim was set up that all the portions of the country which had not been voluntarily examined by the individual prospector, acting under no agency of the government, but at his own expense, and therefore proved to be mineral at a certain date, were to be considered non-mineral and to become the property of the Northern Pacific Railroad Company in spite of the fact that the charter itself said that such lands never should be, and that the company could take other lands in lieu thereof in order to make up the quota that it claimed.

The Legislature passed memorials on the same subject, one to Congress, and one to the Legislatures of other States and Territories interested. The following is the memorial to Congress:

Whereas, The Northern Pacific Railroad, running 400 miles through the mountainous mineral portions of Montana, claims ownership to over 8,000,000 acres of our mountainous mineral lands, none of which are coal or iron lands, and has been permitted to select already about 2,000,000 acres of our choicest mineral land, embracing the most productive mining camps of Montana, and on which are more than 4,000 mining properties, discovered and recorded, but as yet unpatented, and over 1,000 patented mines bearing gold, silver, copper, or lead; and none of these lands are agricultural, or such lands as they are entitled to under their grant; and *whereas*, under the present decisions of the courts, if the patents to these 2,000,000 acres of selected land should be issued to this railroad company, it would wrest from their rightful owners these thousands of mining properties, and all the undiscovered mines in this vast area of mineral lands would become the property of the Northern Pacific Railroad Company; and *whereas*, we believe that the Congressional action can alone save these mines to the people to whom belongs this heritage of untold millions:

Now, therefore, the Legislative Assembly of Montana do earnestly request of your honorable bodies in Congress assembled, that you will pass such an act or acts as will forever preserve to the people, not only the discovered but all the undiscovered mines of Montana, bearing gold, silver, copper, and lead, and all other valuable mineral except coal and iron.

Some suits involving these claims have since been decided against the railroad. In another case the court decided that the legal title to the land rested with the railroad company. But, as the land had been taken up as a mineral claim and the patents issued, the case would rest between the patentee and the Government.

Irrigation.—A bulletin of the Census Bureau on the subject of irrigation in Montana shows that there are in the State 3,702 farms irrigated out of a total number of 5,664. A State congress met in Helena, Jan. 7, 1892, to consider the best means for securing irrigation for the arid lands, and especially to get an expression from the people of the State on the resolutions of the irrigation congress that met in Salt Lake City in September, calling for the cession to the States and Territories by the General Government of the unoccupied portions of the arid regions of the public domain.

Education.—The number of children of school age was 29,353; number attending public schools, 19,051; the number of teachers employed, 585; average monthly wages of teachers, \$51.08; total amount paid to teachers, \$273,276.27; amount collected for school purposes, \$548,021.61; amount paid for libraries, \$6,289.50; for school apparatus, \$7,621.42; for incidental expenses, \$54,197.54; sites and buildings, \$1,100,570.13.

A circular letter was issued in May in regard to the purchase and lease of State lands by the Board of Land Commissioners. Sections 16 and 36 in each township and 72 sections known as university lands belong to the State. When the surveys and classification of these lands have been completed, they will be offered for sale or lease. Until this is done, no right can be initiated under the laws of the United States or of the State. The law prescribes that they shall be sold at not less than \$10 an acre, the proceeds to constitute a permanent school fund, the interest only of which shall be expended in the support of the schools; or they may be leased for periods of not more than five years. These lands are not subject to pre-emption homestead entry, or any other entry under the land laws of the United States; but those who entered upon school lands in good faith prior to March 6, 1891, for the purpose of making a home, will be given the preference in the disposition of those lands; meantime they are liable under the law for cutting or removing from them timber or other material, or despoiling the property in any way.

Strong efforts were made in the Legislature to have the State University located at Missoula, the Agricultural College at Bozeman, and the Normal School at Twin Bridges, but no choice was made. One proposition was to unite all the State institutions for higher education in one great university. There are 72 sections of land available for a university, but no fund or other resources. All the institutions together would have 200,000 acres of land, and about \$20,000 in cash. None of the bills for locating the institutions were passed.

Appropriations were made for the Montana Law Library, and the Historical Society was made a State institution.

Montana University, four miles north of Helena, in the Prickly Pear valley, observed its first anniversary in June, with orations by three graduates. A project is under way to build an electric railroad from the city to the university.

A committee of the State Association of Congregational Churches has been visiting various places in order to select a site for a proposed college under the care of the denomination. Helena bid 240 acres and \$15,000 cash; Great Falls, 300 acres and \$10,000 cash; and Livingston, 200 acres and \$20,000 cash.

Mining.—Great and increasing activity in this industry is shown. Discoveries are constantly made, and improved facilities for development constructed. Experiments are making in the use of electricity in treating the ore.

A recent decision of the Supreme Court is of interest to miners and prospectors. It discusses the question as to what is meant by the provision of the laws of the United States which declares that a mining claim shall not be subject to relocation, notwithstanding the failure of the owner to perform the labor required by law, if in the mean time he has resumed work. The conclusion is given in the following words: "When, therefore, he availed himself of the statutory privilege of resuming work to preserve his estate from forfeiture, we hold that he should have prosecuted the same with reasonable diligence until the requirements for the annual labor or improvements had been obeyed."

According to the last census, Montana exceeded any other State in the production of copper, the output in 1889 being reported at 98,222,444 pounds, while that of Michigan was 86,455,675. The product in 1890 was reported at 122,950,000 pounds, as against 99,570,000 at Lake Superior, and a total of 272,510,000.

The National Mining Congress is to be held at Helena in July, 1892.

The Sapphire Mines.—Interest in the sapphire and ruby fields shows no decline. Only the bars and bench lands lying along the Missouri can be successfully worked until arrangements can be made to carry water to other tracts. It is proposed to do this by means of a canal from Jefferson river.

The Sapphire and Ruby Company of Montana, in London, has secured 4,000 acres on the right bank of the Missouri, twelve miles northeast of Helena. The precious stones are found on the bed rock of an ancient river-channel, now a dry, elevated terrace, skirted by Missouri river and covered with gravel. The tract includes Eldorado Bar, formerly a celebrated gold field.

Marble.—An examination of the Sweet Grass Hills is reported to have shown that the marble there is of the finest quality. It concludes four varieties; a common marble, a green, and a variegated kind, and a black marble, very rare and susceptible of a high polish. A company has secured patents on a tract of territory there, 640 acres in all.

Salmon.—Senator Sanders this year addressed a letter to the Interior Department in reference to the desirability of clearing the obstructions from Clark's Fork of Columbia river, so as to allow the salmon free passage up that river and its tributaries, and the Flathead reservation and Flathead lake. He suggested that as this would result in an increased food supply for the Indians, the agents might be directed to make a reconnaissance, and report in regard to the obstructions. This was done, and the matter was then referred to the United States Fish Commissioner, since it was deemed that the improvement would be of as much value to the white as to the Indian inhabitants.

Bears.—The bounty of \$12,000 offered for destructive animals was almost or quite exhausted during the year; \$5 is paid for every lion or bear, \$2 for every wolf or coyote, and \$1 for every lynx or bobcat killed when the scalp is presented to the proper officer and be punched. The number of bears killed amounts to about 1,200, mostly black and cinnamon bears from Missoula, Dawson, and Custer counties.

MOROCCO, an absolute monarchy in north-western Africa. The Sultan is chosen from the Shereefan family of Tafiallet, which claims descent from the Prophet's daughter Fatima. Each Sultan before his death chooses his heir, whose succession is not often successfully contested, because he has possession of the imperial treasury and control of the black household troops, which furnish a large proportion of the palace officials. The reigning Sultan is Muley Hassan, born in 1831, who succeeded his father, Sidi Mohammed, on Sept. 17, 1873. The Sultan has an army of 10,000 trained infantry, armed with rifles, 400 cavalry, and a number of batteries of field artillery, besides irregular levies

estimated at 300,000 men. About 25,000 are in ordinary times kept under arms near the Sultan in his progresses from town to town.

Area and Population.—The extent and boundaries of the empire are undefined. The area is said to be 219,000 square miles. The population has been estimated at 9,400,000, composed of Berbers, mixed and pure Arabs, Tuaregs, and a small proportion of negroes. The people are Sunnite Moslems of the Malekite creed. There are about 300,000 Jews and 1,800 Christians, who are not admitted to citizenship, but are under the protection of foreign powers.

Commerce and Navigation.—The commerce was formerly in the hands of the English and French. In recent years Germany has got a considerable share of it. On June 1, 1890, Germany concluded a commercial treaty with the Sultan. A line of steamers was already running between Hamburg and Tangier. The German duties on sulphur, coral, cocoons, and spun silk from Morocco were removed, and those on dates, almonds, oil, lead, cork, lemons, oranges, iron and copper ores, hides and skins, and other articles were lowered. Loaf sugar, cotton and woolen and mixed cloths, felt, candles, aniline dyes, gilt jewelry, and other articles of German manufacture are imported in increasing quantities. The total imports in 1889 were valued at £1,681,275, and the exports at £1,585,020. There were 2,336 vessels, of 778,953 tons, entered at the ports of Morocco in 1889, and 2,352, of 783,529 tons, cleared. Of 2,042 vessels, of 612,689 tons, entered in 1888, 394, of 237,390 tons, were French; 735, of 211,994 tons, were English; 726, of 136,558 tons, were Spanish; 33, of 9,404 tons, were German; 92, of 7,423 tons, were Portuguese; 41, of 6,246 tons, were Norwegian; 13, of 1,875 tons, were Danish; and 8, of 1,799 tons, were of various other nationalities.

Political and Economical Condition.—Morocco was a thickly populated and highly civilized country in ancient times. It was one of the chief sources from which cereals were imported by the Romans. The Berbers, who constitute the bulk of the inhabitants, are as vigorous, warlike, and industrious as of old, and the richness of the soil is unimpaired. The policy of the Arab conquerors, who hold the outlets of the country, though they have never been able to impose their rule thoroughly on the Berbers, checks all development. The possessors of wealth are systematically plundered. The exportation of grain is forbidden, and other exports are so taxed that there can be no development of the export trade till the restrictions are removed. Foreigners know little about the country because their route of travel is confined to the road from Tangier, through Quasr el Kebir, to Fez, the usual residence of the Emperor, and thence through Mequinez, to the seaport of Rabat, or sometimes to the old royal city of Morocco, and thence to Mogador, where they can take ship for Tangier. The independence of Morocco is maintained through the rivalry of England, France, and Spain. The Spaniards look on the country as their political heritage. The French desire to extend their boundaries where Morocco touches Algeria, and especially to obtain control of the Sahara and the route of the projected railroad to Timbuctoo and Senegal. England is deter-

mined that there shall be no partition of Morocco that will not secure to her advantages equal at least to those reaped by other Mediterranean powers, and would thwart or retard the consolidation of the French possessions in northwestern Africa, and vigorously oppose the acquisition by Spain of strategic positions commanding the entrance to the Mediterranean, of which Gibraltar is now the only key. Italy, Austria, and Germany work together with England for the preservation of the *status quo* until they can see their way to obtaining compensation. The government of Muley Hassan has been atrocious. Wherever his authority is paramount, men of infamous character hold the offices of *kajids* and governors, while the industrious, the intelligent, and the enterprising natives are robbed of their possessions unless they can hide them from the knowledge of their tyrants. There is no public police force, and what the official extortioners leave, brigands and highway robbers can take. The penalty for saving is worse than that for crime. The Berber tribes, which have maintained their independence, except when periodically raided by the Sultan's army, live in different degrees of comfort and civilization. In some even the women learn to read and write. In 1891 great distress was caused in all the southern provinces by the ravages of locusts, which destroyed half the wheat crop in Rabat and Daral-baida and the whole of the maize and peas crops at Mazagan, produced a scarcity of grain at Mogador and throughout the wheat-growing districts, injured the olive and almond trees, consumed the fruit and vegetable crops everywhere except in northern Morocco, where they appeared too late to do much damage, and caused a failure of pasturage and such mortality among cattle that people sold a large part of their live stock for whatever they could get.

The Spanish Government in April, 1891, laid a cable to connect the port of Ceuta with Tangier. The natives in the Angera district prevented the erection of telegraph poles by the Spaniards until the Moorish Minister of Foreign Affairs interfered. An insurrection at Cape Juby impelled the British to send a gunboat to that part of the coast, where there is an English factory. Late in the year disturbances broke out in the vicinity of Tangier, and the British Government dispatched war vessels to that port and threatened to land sailors if the governor could not protect British interests from the depredations of the rebellious tribes. The trouble was caused by exactions of local officials to which the peasants refused to submit.

In October important changes were made in the *personnel* of the Sultan's court. His favorite brother, Muley Ismain, was accused of a conspiracy to overthrow the Sultan and mount the throne. This popular prince was deposed from the office of *khalifa* or chief judge and sent away to the city of Morocco. He was succeeded by the Sultan's son, Muley Abdul Aziz. At the same time the chief *kaid* and other officials were disgraced and the powerful and generally detested Vizier, Si Ahmed ben Musa, whom ambassadors have regarded as the principal obstruction to the exercise of wholesome foreign influence on Muley Hassan, was dismissed. He was succeeded by Si ben Segher.

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NATIONAL ACADEMY OF SCIENCES.

Officers: President, Othniel C. Marsh; Vice-President, Francis A. Walker; Foreign Secretary, Wolcott Gibbs; Home Secretary, Asaph Hall; Treasurer, John S. Billings. During 1891 two sessions of the Academy were held, the first—the stated session—in Washington on April 21-24. On that occasion the following papers were read by members: "Report on the Human Bones of the Hemenway Collection in the United States Army Museum, prepared by Dr. Washington Matthews, U. S. A.," by John S. Billings; "Stellar Motion Problems," by Lewis Boss; "Researches on the Embryology of Mollusks," by William K. Brooks and E. G. Conklin; "On the Distribution of Colors in Certain North American Reptiles," by Edward D. Cope; "On the Taxonomy of the Apodal Fishes," by Theodore Gill; "On Aërodromies," by Samuel P. Langley; "Application of Interference Methods to Spectroscopic Measurements," by Albert A. Michelson; "Further Studies on the Brain of Limulus Polyphemus," by Alpheus S. Packard; "Effect of Pressure and Temperature on the Decomposition of Diazo-Compounds," by Ira Remsen; "On the Yttrium Earths, and a Method of making Pure Yttrium," by Henry A. Rowland; also the following papers contributed by scientists not members of the Academy, but presented by members: "The Solar Corona, an Instance of the Newtonian Potential in the Case of Repulsion," by Frank H. Bigelow; "Allotropic Silver; Note on a Paper by M. G. Lippman," by M. Carey Lea; and "The Corona, from Photographs of the Eclipse of Jan. 1, 1889," by H. S. Pritchett. Other business consisted of a report of the Watson trustees, who have in charge the consideration of the award of a medal to the person in any country who shall make any astronomical work worthy of special reward and contributing to the progress of astronomy. The Watson medal for 1890 was awarded to Prof. Arthur Auwers, of Berlin. There were two vacancies in the Academy, but owing to the large number of names presented for election a choice was impossible and action was deferred for a year. The "Scientific Session" was held in New York on Nov. 10-13, when the following papers were read: "On Geographical Variation among North American Birds, considered in Relation to the Peculiar Intergradation of *Colaptes Auratus* and *C. Cafer*," by Joel A. Allen; "The Follicle Cells of Salpa," by William K. Brooks; "On the Variation of Latitude," by Seth C. Chandler; "On Degenerate Types of Scapula and Pelvic Arches in the Lacertilia," by Edward D. Cope; "A Nomenclator of the Families of Fishes," by Theodore Gill; "Some Aspects of Australian Vegetation" and "The Nomenclature of Vegetable Histology," by George L. Goodale; "On Certain New Methods and Results in Optics," by Charles S. Hastings; "An Exhibition of the New Pendulum Apparatus of the United States Coast and Geodetic Survey, with Some Results of its Use" and "On the Use of a Free Pendulum

as a Time Standard," by Thomas C. Mendenhall; "Measurement of Jupiter's Satellites by Interference," by Albert A. Michelson; "Astronomical Methods of determining the Curvature of Space," by Charles S. Peirce; "On a Color System," by Ogden N. Rood; "On the Application of Spectrum Analysis to the Analysis of the Rare Earths, and a New Method for the Preparation of Pure Yttrium," by Henry A. Rowland; "The Tertiary Rhynchitidae of the United States," by Samuel H. Scudder; also the following papers by non-members: "Preliminary Notice of the Reduction of Rutherford's Photographs," by John K. Rees, introduced by Edward C. Pickering, and "The Proteids of Albuminoids of the Oat Kernel," by Thomas B. Osborne, introduced by Samuel W. Johnson. Subsequent to the meeting held in April, William Ferrel, Julius E. Hilgard, John Le Conte, and Joseph Leidy died, and, in accordance with the custom of the Academy, Cleveland Abbe, Eugene W. Hilgard, Joseph Le Conte, and S. Weir Mitchell were appointed to prepare memorial sketches of the deceased scientists. (Brief notices of their careers also appear, among the OBITUARIES, AMERICAN, in the present volume.) At a business meeting of the Academy its members accepted in trust the money left to them by their fellow-member Frederick A. P. Barnard, late President of Columbia College, the interest of which is to be expended in the procuring of a Barnard medal, which will be given once in five years for the best services in physics or astronomical science. The nominations are to be made by the Academy, and it is open to foreigners. The president's annual report to Congress was also submitted to the members at a private business meeting. Reception to the Academy were given by President Seth Low, of Columbia College, and by Mrs. Henry Draper, where an account of the astronomical and photographic work of the "Henry Draper Memorial fund" as conducted at Harvard University was presented by Prof. Edward C. Pickering, director of the observatory there.

NAVY OF THE UNITED STATES. A

careful estimate of the armored navies of the world, made one year ago, in which the fighting efficiency of each armor-clad then built or building was considered, established the fact that in 1894, so far as armored construction is concerned, the United States will rank sixth in naval power. By that time nearly all the vessels under construction in January, 1891, in our own and other navies will be completed. Unarmored cruisers and thinly plated armor-clads (with less than 6 inches of wrought iron or its equivalent in compound or steel) were not considered. But unarmored vessels are possessed by the different powers in nearly the same proportion as armor-clads, and whatever value be assigned them, the result would not be materially altered. Making some slight corrections for changes in the design of certain ships since the table was prepared, and expressing their strengths in percentages of

UNARMED VESSELS.

Name.	Type and number of screws.	Where built.	DIMENSIONS.			Horse-power of engines.	Maximum speed.	RADIUS OF ACTION ON COAL SUPPLY GIVEN		Coal capacity.	Torpedo tubes.	BATTERY.		Contract price, hull and machinery.	Gun protection and coming tower.	Protective deck.	Date of act authorizing construction.	Expiration of contract.	Remarks.		
			Launch.	Length on water-line.	Breadth, extreme.			Mean draught.	At 10 knots.			At [] knots.	Main.							Secondary.	
Cruiser No. 12.	P. C. 3 s.	Cramp, Philadelphia.	Tons. 7,400	1890	1892	412	0 53	2 22	6	21,000	22-0	31,500	.....	6	II 8-in.	XII 6-pdr. R. F.	4'' shields.	In. 4	June, '90	May, '98	Building.
Cruiser No. 13.	P. C. 3 s.	Cramp, Philadelphia.	7,400	1890	....	412	0 53	2 22	6	21,000	22-0	31,500	.....	6	II 6-in.	IV 1-pdr. R. F.	C. T. 5''	2 1/2	Mar., '91	Aug., '98	do.
Cruiser No. 6.	P. C. 2 s.	Union Iron Works, San Francisco.	5,500	1890	1892	340	0 53	0 21	6	13,500	20-0	13,000	2,200 [20]	6	IV 8-in.	IV 6-pdr. R. F.	2'' shields	4 1/2	Sept., '88	Apr., '98	do.
Chicago...	P. P. C. 2 s.	Roach, Chester.	4,500	1888	1886	325	0 43	2 19	0	5,248	16-3	6,500 [12]	3,000	..	IV 8-in.	II 6-pdr. R. F.	over 8'' and 5'' guns.	1 1/2	Aug., '82	.....	In commission.
Baltimore.	P. C. 2 s.	Cramp, Philadelphia.	4,400	1887	1888	327	6 43	6 20	6	10,725	20-6	8,000 [19]	1,600	5	IV 8-in.	IV 6-pdr. R. F.	2'' shields.	4	Aug., '86	June, '89	do.
Philadelphia.	P. C. 2 s.	Cramp, Philadelphia.	4,325	1888	1889	327	6 43	6 19	2	9,815	19-7	8,300 [19-5]	1,600	5	XII 6-in.	IV Gatling.	2'' shields.	4	Mar., '87	Oct., '89	do.
San Francisco.	P. C. 2 s.	Union Iron Works, San Francisco.	4,088	1888	1889	310	0 49	2 13	9	10,400	20-2	8,300 [18]	800	6	XII 6-in.	IV 6-pdr. R. F.	2'' shields	3	Mar., '87	Oct., '89	do.
Newark ..	P. C. 2 s.	Cramp, Philadelphia.	4,088	1888	1890	310	0 49	2 13	9	9,231	19-6	8,300 [18]	800	6	XII 6-in.	IV 6-pdr. R. F.	2'' shields.	3	Mar., '85	Oct., '89	do.
Charleston	P. C. 2 s.	Union Iron Works, San Francisco.	4,040	1887	1888	312	0 46	0 19	6	6,943	18-8	6,500 [16]	2,800	4	II 8-in.	IV 6-pdr. R. F.	2'' shields.	3	Mar., '85	June, '89	do.
Boston ...	P. P. C. 1 s.	Roach, Chester.	3,189	1882	1885	270	8 42	0 17	6	4,030	16-6	5,300 [13]	580	..	II 8-in.	II 6-pdr. R. F.	Light shields over guns.	1 1/2	Aug., '82	.....	do.
Atlanta ..	P. P. C. 1 s.	Roach, Chester.	3,189	1882	1885	270	8 42	0 17	6	4,000	16-4	5,300 [13]	580	..	II 8-in.	II 6-pdr. R. C.	8'' barbettes around 8''	1 1/2	Aug., '82	.....	do.

UNARMED VESSELS. (Continued).

Name.	Type and number of crews.	Where built.	Displacement.	Keel laid.	Launch.	DIMENSIONS.			RADIUS OF ACTION ON COAL SUPPLY GIVEN.			Coal capacity.	Torpedo tubes.	BATTERY.		Contract price, hull and machinery.	Gun protection and counting tower.	Protective deck.	Date of authorizing construction.	Expiration of contract.	Remarks.
						Length on water-line.	Breadth, extreme.	Mean draught.	At 10 knots.	At 12 knots.	At 14 knots.			Main.	Secondary.						
Cincinnati	P. C. 2 s.	Navy Yard, New York	3,153	1890	1892	300 0	42 0	18 0	8,600	6,000	6,000	400	6	I 6-in. X 5-in. R. F.	VIII 6-pdr. R. F. IV 1-pdr. R. F. II Gatling.		4" shields. C. T. 2".	24 1	Sept., '88		Building.
Raleigh...	P. C. 2 s.	Navy Yard, Norfolk.	3,153	1890	1892	300 0	42 0	18 0	8,600	6,000	6,000	556 6	6	I 6-in. X 5-in. R. F.	VIII 6-pdr. R. F. IV 1-pdr. R. F. II Gatling.		4" shields. C. T. 2".	24 1	Sept., '88		do.
Montgomery	P. C.* 2 s.	Columbian Iron Works, Baltimore.	2,000	1890	1891	257 0	37 0	14 6	9,000	1,600	1,600	435 6	6	I 6-in. VIII 5-in. R. F.	VI 6-pdr. R. F. II Gatling.		24" shields. C. T. 2".	14	Sept., '88	May, '92	do.
Detroit...	P. C.* 2 s.	do.	2,000	1890	1891	257 0	37 0	14 6	9,000	1,600	1,600	435 6	6	I 6-in. VIII 5-in. R. F.	VI 6-pdr. R. F. II Gatling.		24" shields. C. T. 2".	14	Sept., '88	May, '92	do.
Cruiser No. 11.	P. C.* 2 s.	Harrison Loring & Co., Boston.	2,000	1890	1892	257 0	37 0	14 6	9,000	1,600	1,600	435 6	6	I 6-in. VIII 5-in. R. F.	VI 6-pdr. R. F. II Gatling.		24" shields. C. T. 2".	14	Sept., '88	May, '92	do.
Yorktown.	P. P. C.* 2 s.	Camp, Philadelphia.	1,700	1887	1888	290 0	36 0	14 0	8,500	2,400	2,400	400 6	6	VI 6-in.	II Gatling.		Light shields.	4	Mar., '88	June, '88	In commission.
Concord...	P. P. C.* 2 s.	Palmer, Chester.	1,700	1888	1889	280 0	36 0	14 0	8,518 17-1	2,400	2,400	400 6	6	VI 6-in.	Same as Yorktown.		Light shields.	4	Mar., '87	May, '89	In commission.
Bannington.	P. P. C.* 2 s.	Palmer, Chester.	1,700	1888	1889	280 0	36 0	14 0	8,533 17-5	2,400	2,400	400 6	6	VI 6-in.	Same as Yorktown.		Light shields.	4	Mar., '87	May, '89	In commission.
Dolphin...	Disp. boat.	Rosch, Chester.	1,485	1888	1884	240 0	32 0	14 8	4,500	2,000	2,000	310	1	II 4-in.	II 6-pdr. R. F. IV 47 mm. R. C.		Light shields and towers.	4	Mar., '88		In commission.
Macbias...	P. P. g. b. 2 s.	Bath Iron Works, Bath, Maine	1,050	1891	1891	184 4	32 0	12 0	4,700	2,500	2,500	250 1	1	VIII 4-in. R. F.	II Gatling.		4" spontoons.	4	Mar., '89	Apr., '92	Building.
Gunsbat No. 6	P. P. g. b. 2 s.	do.	1,050	1891	1892	184 4	32 0	12 0	4,700	2,500	2,500	250 1	1	VIII 4-in. R. F.	Same as Macbias.		4" spontoons.	4	Mar., '89	Apr., '92	Building.
Practice vessel.	G. b. 2 s.	Moore & Son, Elizabethport, N. J.	888	1891	1892	187 6	32 0	11 6	3,400	2,200	2,200	200 2	2	IV 4-in. R. F.	II 6-pdr. R. F. II 1-pdr. R. F. I 87 mm. R. C.		Light shields.	4	Sept., '88	July, '92	Building.
Petrel....	P. P. g. b. 1 s.	Columbian Iron Works, Baltimore.	890	1887	1888	176 3	31 0	11 7	3,800	1,580	1,580	168 1	1	IV 6-in.	II Gatling.		1 light shields.	4	Mar., '88	Dec., '87	In commission.

ARMORED VESSELS.

Name.	Type and number of turrets and screws.	Where built.	Displacement.	Keel laid.	Launch.	DIMENSIONS.			Horse-power of engines.	Maximum speed.	RADIUS OF ACTION ON COAL SUPPLY GIVEN.		Torpedo tubes.	BATTERY.		Contract price, hull and machinery.	ARMOR.		Armor-deck.	Date of act authorizing construction.	Expiration of contract.	Remarks.
						Length on water-line.	Breadth, extreme.	Mean draught.			Main.	Secondary.		Over guns.	Other armor.							
Massachusetts.	B. S. 6 T. 2 S.	Camp, Philadelphia.	Tons. 10,231	1891		Ft. in. 315	Ft. in. 0 69	Ft. in. 3 24	0	9,000	16-2 15-0	16,000	.....	6	IV 13-in. VII 8-in.	IV 1-pdr. R. F. XX 6-pdr. R. F.	\$2,020,000	b. 17, 10, 8, 14, 5	In.	June, '90	Nov., '98	Building.
Indiana...	B. S. 6 T. 2 S.	Camp, Philadelphia.	10,231	1891	....	345	0 69	3 24	0	9,000	16-2 15-0	16,000	.....	6	IV 13-in. VII 8-in.	IV 1-pdr. R. F. XX 6-pdr. R. F.	3,020,000	b. 17, 10, 8, 14, 5	24	June, '90	Nov., '98	do.
Oregon...	B. S. 6 T. 2 S.	Union Iron Works, San Francisco.	10,231	1891	....	345	0 69	3 24	0	9,000	16-2 15-0	16,000	.....	6	IV 13-in. VII 8-in.	IV 1-pdr. R. F. XX 6-pdr. R. F.	3,180,000	b. 17, 10, 8, 14, 5	24	June, '90	Nov., '98	do.
New York	A. C. 2 T. 2 S.	Camp, Philadelphia.	8,150	1890	1891	350	6 64	10 23	4	16,500	20-0 18-5	13,000	.....	6	IV 13-in. VII 8-in.	IV 1-pdr. R. F. XX 6-pdr. R. F.	2,985,000	b. 17, 10, 8, 14, 5	24	Sept., '88	Jan., '93	do.
Maine....	A. C. 2 T. 2 S.	Navy Yard, New York.	6,648	1885	1890	318	0 57	0 21	6	9,000	17-0	7,000	2,770 [14-5]	6	IV 10-in. VI 6 in.	IV 1-pdr. R. F. XX 6-pdr. R. F.	2,500,000	b. 12 T. 8 § b. 12	4 2	Aug., '86	.....	do. + Sutu- tory limit. \$ Inclined shield.
Texas	B. S. 2 T. 2 S.	Navy Yard, Norfolk.	6,300	1889	1892	301	4 64	7 22	6	8,600	17-0	8,000	3,100 [15-2]	6	II 12-in. VI 6-in.	XII 6-pdr. R. F. IV 1-pdr. R. F.	2,500,000	b. 12 b. 12	8	Aug., '86	.....	Building. + Sutu- tory limit.
Puritan...	B. S. 2 T. 2 S.	Roach, Chester.	6,060	1875	1882	289	6 60	2 18	0	4,000	13-0	2,500	.....	No.	IV 12-in. VI 4 in.	II 6-pdr. R. F. IV 3-pdr. R. F.	2,300,970	b. 14 T. 8 §	2	Mar., '85 Aug., '86 Mar., '87	.....	Rebuild- ing.
Monterey.	B. S. 2 T. 2 S.	Union Iron Works, San Francisco.	4,138	1889	1891	256	0 59	0 14	10	5,400	16-0	2,900	625 [16]	.....	II 12-in. I 10-in.	6 6-pdr. R. F. 4 1-pdr. R. F.	1,628,950	b. 13 & 14 T. 8 §	.....	Mar., '87	June, '92	Nearly complete, \$ Inclined shield.
Monad- nock.	B. S. 2 T. 2 S.	Mare I., California.	3,990	1874	1888	259	6 55	10 14	6	3,000	14-5	3,000	.....	No.	IV 10-in. II 4-in.	2 6-pdr. R. F. 2 3-pdr. R. F.	1,592,849	b. 11-5 T. 7 §	2	Mar., '85 Aug., '86 Mar., '87	.....	Rebuild- ing.
Amphi- trite.	B. S. 2 T. 2 S.	Harlan & Hollings- worth Co., Wilmington.	3,990	1874	1888	259	6 55	10 14	6	1,600	12-0	2,000	.....	No.	IV 10-in. II 4-in.	2 6-pdr. R. F. 2 3-pdr. R. F.	1,590,950	b. 11-5 T. 7 §	2	Mar., '85 Aug., '86 Mar., '87	.....	Rebuild- ing.
Terror...	B. S. 2 T. 2 S.	Camp, Philadel- phia.	3,990	1874	1888	259	6 55	10 14	6	1,600	12-0	2,000	.....	No.	IV 10-in.	2 6-pdr. R. F. 2 3-pdr. R. F.	1,591,077	T. 11-5 and 12-5	2	Mar., '85 Aug., '86 Mar., '87	.....	Rebuild- ing.
Mianto- nomoh.	B. S. 2 C. 2 S.	Roach, Chester.	2,990	1874	1876	259	6 55	10 14	6	1,600	12-0	2,000	.....	No.	IV 10-in.	2 6-pdr. R. F. 2 3-pdr. R. F.	1,637,110	T. 11-5 b. 7	2	Mar., '85 Aug., '86 Mar., '87	.....	In com- mis- sion. Turned armor.
Ram.....	Ram, 2 S.	Bath Iron Works, Me.	2,183	1891	1892	250	9 43	5 15	0	4,800	17-0	3,700	.....	No.	.....	IV 6-pdr. R. F.	990,000	C. T. 19	6	Mar., '89	July, '92	Building.

TORPEDO VESSELS.

Name.	Type.	Where built.	Displacement.	Keel laid.	Launch.	DIMENSIONS.			Horse-power of engines.	Maximum speed.	RADIUS OF ACTION OR COAL SUPPLY GIVEN.		Coal capacity.	Torpedo tubes. f.—fixed; tr.—training.	BATTERY.		Contract price, hull and machinery.	ARMOR.		Armor deck.	Date of setting and shorting of construction.	Explanation of construction.	Remarks.
						Length on water-line.	Breadth, extreme.	Mean draught.			At 10 knots.	At [] knots.			Main.	Secondary.		Over guns.	Other armor.				
Torpedo cruiser.			Tons. 750			Ft. in.	Ft. in.	Ft. in.	Kts.				Tons.										
Vesuvius.	Dyna- mic cr. 2 Cl. Torp. B.	Cramp, Phila- del- phia.	990	1887	1888	251	9 26	5 10	7	4,450	21-7	5,800	150 28	No.	III 15-in. pneu- matic.	IV 6-pdr R. F. IV 1-pdr. R. F. II Gatling. III 8-pdr. R. F.	\$350,000		Inches.	In.	Aug. '86		No bids received.
Stiletto.	2 Cl. Torp. B.	Hereschoff, Bristol.	31			88	6 11	0 3	0	22-9		2,000 [S]	18 7	1		I 87 mm. R. C.	25,000						In com- mission.
Cushing.	1 s. 1 Cl. Torp. B.	do.	116	1880	1880	188	9 14	10 5	3	1,720	22-5			1 ft. 2 tr.	1 ft. 2 tr.	III 1-pdr. R. F.	82,750			Mar. '87	June, '88		Pur- chased.
Torp. Boat No. 2.	2 s. 1 Cl. Torp. B.	Iowa Iron Works, Du- buque, Ia.	120	1891	1892	150	0 15	6 4	8	1,800	24-0			1 ft. 2 tr.	1 ft. 2 tr.	IV 1-pdr. R. F.	118,500			Jan. '90			In com- mission. Building.

that of Great Britain, the first 10 naval powers probably stand as follow:

Order.	Power.	Relative strength.
1.	Great Britain	100
2.	France	68
3.	Italy	48
4.	Russia	38
5.	Germany	21
6.	United States	17
7.	Spain	11
8.	China	6
9.	Austria	5
10.	Turkey	5

This is far superior to the condition of affairs in 1882, when our navy was one of the weakest in the world. An account of the preliminary efforts of rebuilding the navy to and including 1888 is given in the "Annual Cyclopaedia" for that year (pages 787 to 798), to which frequent reference will be made in this article. At that time but three of the new vessels—the "Dolphin," "Atlanta," and "Boston"—were completed, and armor-clad construction had just begun. The work has since been prosecuted unremittingly, until at present there are ready for service, or in course of construction, 13 armored vessels, 25 cruisers (unarmored) of various types, and 3 torpedo boats. The details of these new vessels are given in the accompanying tables.

Notes on the Tables.—The abbreviations used are: A. C., armored cruiser; b., barrette; blt., armor belt (on the water-line); B. S., battle ship; C., cruiser; Cl., class; cr., cruiser; C. T., conning tower; Disp., dispatch; ft., feet; g. b., gunboat; in., inch or inches; mm., millimetres (in diameter of bore); P. C., protected cruiser (i. e., a cruiser with complete curved armor deck); P. P. C., partially protected cruiser (i. e., with armor or protective deck covering boilers and engines only, or extending over the entire length, but simply bullet-proof, and intended chiefly for cellular subdivision); P. P. g. b., partially protected gunboat; R. C., Hotchkiss revolving cannon; R. F., rapid-fire (guns); s., screw or screws; T., turret. The "Puritan," "Monadnock," "Amphitrite," "Terror," and "Miantonomoh" have iron hulls; all others are of steel. The "Boston," "Atlanta," "Dolphin," and "Petrel" have single screws; the remainder have twin screws, except cruisers 12 and 13, in which three are fitted. The speeds given for vessels that have had their trials are, first, the maximum results obtained on the trial at load draught for the best hour, and second, the average speed for the whole run of four or six hours, continuous steaming; in the case of vessels not yet completed, the higher speed is that which is expected on trial for one to four hours, and the second is the "sustained sea-speed," which it is believed the vessel will be able to maintain under favorable conditions for several days. In the recently designed ships the ability to preserve high speed has been aimed at, instead of power to achieve high speeds for short periods by excessive forcing, and the weights assigned to boilers and engines have been therefore more liberal. In comparing the speeds given in these tables with others reported from abroad, it must be remembered that the latter are chiefly from runs over a measured mile, and could not be maintained over the long courses on which our vessels are tried.

An asterisk (*) attached to any data indicates that it is more fully given in the "notes." The first of the two amounts given in the column of "coal capacity" is the number of tons that can be carried when the bunkers are full, the second is the normal supply with the vessel at her designed load draught; when the total bunker capacity is on board, her displacement is greater than that given in the displacement column by the difference between the two coal supplies. The coal bunkers surround the boilers and engines, and are, in general, arranged to give as much protection as possible consistent with accessibility. The danger of shot-holes at the water-line is reduced by cellular subdivision and a protective deck; in some vessels further security is afforded by a belt of woodite or similar water-excluding material extending around, or partly around, the ship at the water-line. This material will allow a shot to pass through without resistance, but through resilience and elasticity closes behind it again, leaving little or no hole for the admission of water; and, if water should gain entrance, it reduces the space in the cells that the water could fill, and consequently assists to preserve the stability which otherwise might be in danger from this cause. The boilers are chiefly horizontal fire-tubular, though the torpedo boats and the "Monterey" (in part) have the water-tubular type. The new armored vessels, the "Monadnock" and the later cruisers, have vertical triple-expansion engines; the torpedo boats have quadruple expansion, and the other vessels have compound or triple expansion, chiefly horizontal. With the exception of the practice cruiser, none of the recent designs have been fitted with sail power beyond a light fore-and-aft or schooner rig.

In the "Massachusetts," "Indiana," and "Oregon" (see illustration) it is believed that the United States possesses fighting ships that have few equals and probably no superiors. They are designated as "coast-line battle ships," which means that they are primarily intended for the defense of our coast, and their greatest fighting efficiency is expected to be under conditions likely to arise in such defense. To allow access to a large number of harbors, the mean draft has been kept down to 24 feet, considerably less than that of vessels of like tonnage abroad. With this draft 400 tons of coal can be carried, giving a steaming endurance or "radius of action" of about 4,000 miles; but the bunkers will hold 1,800 tons, sufficient for 16,000 miles at 10 knots, so that these ships may be dispatched on distant service. But they ought not to be sent out to immediate action with the bunkers full, as, with the consequent increased displacement, the top of the armor belt is only a few inches above water. Their batteries are the most formidable of any yet designed for ships of war. The large Italian and English guns of about 100 tons are theoretically superior to the 13-inch guns of these ships; but they fire much more slowly, their excess of penetrating power is of doubtful value, and recent developments have shown the English pieces at least to be total failures. The auxiliary battery of 8-inch guns has no counterpart in other navies. It is a complete answer to the open barbette with thinly shielded gun, as well as to the "Italia" type without water-line or machin-

ery protection other than the armor deck. The armor protection is equally excellent: 17 to 20 inches (horizontally measured) over heavy guns, 10 inches (horizontal measurement) over 8-inch battery, 17 inches on redoubts under 13-inch gun barbettes, 5 inches on the broadside between redoubts as a protection against high explosive shell, and 18 inches on the water-line. The speed is fair. All three vessels are expected to be ready for service early in 1894.

The "New York" is an armored cruiser of the latest type. She is intended as a "cruiser destroyer," a "commerce protector," and general raider along the coasts of an enemy. These rôles she is able to play, since her speed is superior to that of all other armored cruisers, and it is doubtful if any unarmored ones could escape in other than the smoothest water, her size (especially length) giving an immense advantage over most vessels and affording the option of compelling or refusing battle. The protection to the hull consists of a steel deck 6 inches thick on the slopes amidships; a water-line belt of armor (including skin plating) of 5 inches extending from the protective to the berth deck abreast the machinery; a coffer-dam, or belt of water-excluding material, with the same limits above and below, extending completely around the ship; and lastly as much defense as possible is derived from the arrangement of the coal supply. Two of the 8-inch guns are mounted in a 10-inch barbette forward in a 7-inch covered turret; two others are similarly disposed aft; the remaining pair are mounted, one on each side amidships, in semicircular barbettes, and covered with machine-gun-proof shields. The complement of officers and men is 475. The "New York" is expected to be completed in 1892.

The "Puritan" is described on page 789 of the "Annual Cyclopædia" for 1888. Since that article was written considerable changes have been made in her design. The battery is now four 12-inch guns mounted in barbette turrets, with the plane of fire 10½ feet above water, which will admit of its being fought in much heavier weather than if in roller-base turrets. On deck, between the turrets, is a superstructure in which are the quarters of the officers. The former quarters below have been given up to the crew, affording additional space for their accommodation, which was much needed. The armor belt is to be 5 feet 7 inches deep and 14 inches thick amidships. The armor deck is 2 inches; barbettes, 14 inches; and inclined turrets, 8 inches.

The "Amphitrite" and "Monadnock" are to be of the same type, but smaller, with 9-inch side armor, 11½ inch barbettes, 7½-inch inclined turrets, and 10-inch guns.

The "Terror" is to have roller-base turrets 12½ and 11½ inches thick, side armor 7 inches. Similar in design to the "Miantonomoh."

The design of the "Monterey" (as coast-defense vessel No. 1 has been named) has received important modifications. The armor belt is reduced to 13 inches amidships, and the barbettes to 13 and 11½ inches; the turrets are of 8 and 7½ inches. The 16-inch and 12-inch guns have been replaced by two 12-inch and two 10-inch, respectively. The dynamite gun and 4-inch rapid-fire guns have been removed. The



THE UNITED STATES ARMORED BATTLE-SHIP "INDIANA."

armor deck forward has been increased from 2 to 3 inches.

Const-defense vessel No. 2 will not be built, as the act authorizing her construction has been repealed.

Protected cruiser No. 6, building at the Union Iron Works, San Francisco, is officially designated as unarmored, but the protective deck is 4½ inches thick on the slopes abreast the boilers and engines, the guns of the main battery are protected by turrets and barbettes or segmental shields, all of 4 inches thickness, and the 6-pounders of the secondary battery have 2-inch shields. A belt of water-excluding material 2 feet 9 inches thick is worked above the protective deck, completely surrounding the ship at the water-line. The space between the protective and berth decks is subdivided as usual into a large number of compartments, and much of it is filled with coal, giving additional protection. As in the "New York," the machinery of this cruiser has been given sufficient weight to insure a high sustained sea speed nearly approaching the probable maximum performance over the usual trial course. The complement of officers and men is 466. Cruiser No. 6 will be completed about July, 1893.

Protected cruisers No. 12 and 13, practically identical in design, are unique in type. The leading features are speed and radius of action. The anticipated maximum speed is 22 knots; sustained sea speed, 21 knots; and the horsepower corresponding is 21,000 and 16,400, respectively. This power is divided between three sets of engines and three screws. One is in the usual position for a single screw vessel, and the others are farther forward, as in twin-screw ships. The protection to the vitals consists of a complete protective deck 4 inches thick on the slopes over boilers and engines, 2½ inches thick forward and aft; second, of a coffer-dam or belt of water-excluding material 5 feet thick and cellular subdivision; lastly, coal protection. The guns of the main battery are protected by 4-inch and 2-inch shields, and the 6-pounders also by 2 inches. The coal supply is very large, about 2,400 tons, sufficient for about 31,500 nautical miles at 10 knots. Being intended for commerce destroyers, they were designed to represent merchant steamers as closely as possible; military tops have therefore been omitted, and the sponsons for the battery are inconspicuous. Both cruisers will be completed during 1893.

The "Cincinnati" and "Raleigh" are twin-screw protected cruisers with thick protective decks, high speed, and powerful batteries of rapid-fire guns. The single 6-inch is mounted on the forecastle; two 5-inch are placed on the poop, one on each side; the other eight are in sponsons, two under the poop, two under the forecastle, and four in broadside. They are well-decked vessels, i. e., having poop and forecastle, but with the waist or central portion uncovered. The protective deck is 2½ inches thick on the slope over the machinery spaces and 2 inches at the ends. A coffer-dam, or belt of woodite, will be worked above the protective deck next the outside plating in the coal-bunkers; the usual coal protection is afforded. The "Cincinnati" is building at the New York Navy Yard, and the "Raleigh" at Norfolk, as no bids were received

from private parties within the limit of cost prescribed by law. Both will be launched in 1892.

The "Detroit," "Montgomery," and cruiser No. 11 are twin-screw, well-decked cruisers of 2,000 tons each, with water-tight steel deck, eleven sixteenths of an inch thick, coal protection, and partial woodite belt. One 6-inch gun is mounted on the forecastle and one on the poop; the 5-inch are in sponsons, four on each side, with bow and stern fire for the forward and after pair, respectively. These vessels will probably all be completed during 1892.

The "Machias" and gunboat No. 6 are twin-screw, well-decked vessels of 1,050 tons with water-tight deck, coal protection, and partial woodite belt. On the forecastle is mounted one 4-inch gun, on the poop another; the remaining six are in sponsons, two under the forecastle with bow fire, two under the poop with stern fire, and one on each side amidships. The complement of officers and men is 150. Both vessels should be ready for service during the summer of 1892.

The practice cruiser is designed for use at the Naval Academy. She is a twin-screw, well-decked gunboat of 835 tons, barkentine rig, with 5,000 square feet spread of canvas. Quarters are provided for a captain, 8 wardroom officers, and 120 cadets and men. She will be completed during 1892.

The harbor-defense ram is from a design by Rear-Admiral Daniel Ammen, U. S. N. The armor is arranged in the form of a "turtle-back," 6 inches thick at the water-line and 2½ inches on the crown. The conning tower is 18 inches, and all hatches and ventilators and the smoke-pipe have armored bases. When ready for action the ram is submerged to fighting trim by admitting water into the double bottom. The only projections above the armor deck are the conning tower, smoke-pipe, ventilators, and boat supports. The contract time for delivery is July, 1892, and she should be ready for service very soon afterward.

The design for torpedo cruiser No. 1 is laid aside, awaiting further action by Congress. It was found impossible to build her within the limit of cost prescribed by law.

Armor.—The development of armor manufacture in the United States has been uninterruptedly successful. From its inception, in 1887 (see "Annual Cyclopædia" for 1888, page 794), to the present time the progress has been remarkable. When the first new ships were begun in 1882 no establishment in this country was able to turn out iron plates of over five inches thickness. The wise policy of the Navy Department in giving the first call for modern armor in one large contract enabled the Bethlehem Iron Company to perfect its plant and acquire the secrets of armor manufacture from abroad. In November, 1890, Secretary Tracy, finding that the amount of armor required for the new ships was far in excess of what the Bethlehem Company could produce within the necessary time, entered into a contract with Carnegie, Phipps & Co., of Pittsburgh, who, in consideration of an order for 5,900 tons of armor plates, agreed to adapt their plant for armor production and to begin deliveries within a few months. Their establishment is now fully

equipped, and they are delivering armor at a rapid rate.

The question of the best material for armor has been hotly discussed. Compound (hard-steel face with wrought-iron back), steel, and nickel-steel are the chief competitors. The conclusions of the Gun-foundry Board and investigations undertaken on its own account decided the Navy Department to adopt steel for the armored vessels under construction, and all contracts were made for that metal. Before deliveries had begun, and while there yet remained time to alter the provisions of the contract, the department conducted what may be regarded as the most important of all recent armor tests in this or any other country. Three test plates, 10.5 inches thick, were acquired—two from Schneider & Co., of Creusot, France, of steel and nickel-steel respectively, the third from Cammell & Co., of Sheffield, England, was of compound steel and iron. As the latter firm offered their plate for sale to the department without solicitation, and were aware that it would be tested in competition with the two that had already been contracted for with Schneider & Co., their efforts to place it in competition seem to indicate their perfect confidence in it, and that it was probably equal to their best production. The trial was conducted publicly, and under conditions acknowledged to be perfectly fair by the agents of the armor factories, immediately before it was begun. The result, while in a measure anticipated by our ordnance authorities, exceeded their expectations, and was a source of disappointment and considerable alarm to those nations that had wholly, or in part, committed themselves to the use of compound armor. The all-steel plate gave the least penetration, but was cracked through. The compound plate was completely perforated by each projectile (four 6-inch and one 8-inch), and at the end of the firing was a total wreck with nearly the entire hard-steel face stripped off. The nickel-steel plate, while not exhibiting quite so great resistance to penetration as that of all-steel, approached it very closely in that respect, and showed a marked superiority in tenacity and resistance to rupture. No through cracks were developed, and the few surface cracks were unimportant. Neither the all-steel nor the nickel-steel allowed a single projectile to get through. In the opinion of the trial board the nickel-steel proved itself the best, owing to its freedom from serious cracks, which more than counterbalanced the slightly greater penetration it permitted. Subsequent trials of the same plate to ascertain its behavior in cold weather showed that, while it was perhaps not wholly uninfluenced by temperature, the difference was very slight, and certainly not greater than that exhibited by other kinds of armor under similar conditions.

During 1890 and 1891 several thin plates treated by the Harvey process of surface hardening by carbonization and subsequent manipulation were tested, with results superior to any ever before attained. The process was then applied to thicker armor, and during October, November, and December, 1891, nine plates of American manufacture were tested at the new naval proving ground at Indian Head. The results were most satisfactory. Two of the plates—one of nickel-steel Harveyized and the other

of nickel-steel untreated—showed themselves superior to both of the best two plate obtained from Schneider in 1890. The others were all good. The conclusions of the Annapolis trial of the preceding year were sustained as to the superiority of nickel-steel, and the Harvey process, though still somewhat defective as regards uniformity, was shown to add materially to the resisting qualities of the plate.

In less than five years the armor industry has been created and developed to a point at which we are able to produce armor equal to, and, so far as any tests here or elsewhere have shown, superior to, any manufactured abroad. The work on the plates for the vessels building is going forward rapidly, and it is believed that little further delay will arise from future tardiness of deliveries; and when the ships are completed, we shall have the satisfaction of knowing that their armor protection is superior to that of equal thickness on any vessels in the world of previous or contemporaneous construction.

A most important point connected with the development of armor in this country is the success obtained by Carnegie, Phipps & Co. with the rolling process of manufacture, by which the great expense of forging under the hammer is rendered no longer absolutely necessary. This places armor manufacture within the reach of several firms heretofore deterred from attempting it on account of the great expense of establishing a suitable plant.

Projectiles.—During the past few years the manufacture of projectiles specially adapted to piercing armor has been vastly improved. The long used and highly esteemed chilled cast-iron Palliser shot is powerless against modern armor, breaking up like so much glass on its hard face, or crushing to fragments in a vain attempt to penetrate the more homogeneous varieties. Chrome steel and other varieties of that metal under special treatment have been tried, with the resulting production of a projectile that will pass through the toughest armor almost without a scratch, and often without deformation sufficient to prevent its being used again. The leading processes are probably the Holtzer and the Firminy, though several others approach them closely in results. No attempt was made to produce such projectiles in the United States until 1890, when, through the efforts of the Navy Department, the Carpenter Steel Company of Reading, Pa., was induced to purchase the patents and secret processes of the Firminy type, which were offered at much more reasonable rates than those of its chief competitor. During the present year the Carpenter Company has begun deliveries under contract, and their productions have proved satisfactory, the more so as their later shells show a distinct improvement, due, it is said, to a partial abandonment of the Firminy formula in favor of one of their own discovery. Several other methods of manufacture of domestic origin have been developed and give promise of good results, though not yet considered satisfactory.

Common shell (i. e., shell not intended for use against armor) are still largely made of cast iron, especially for the larger calibers; but as forged-steel shells have many advantages, notably their greater capacity for bursting charges, owing to

equal strength with thinner walls, a means of producing them at a moderate cost has been persistently sought. It is hoped that several methods recently invented will accomplish the desired end, and contracts have been entered into with two concerns—the United States Projectile Company, of Brooklyn, and the American Projectile Company, of Boston—for a large number of 6-inch, 5-inch, 4-inch, and 6-pounder caliber. The process of the latter company employs electro-welding, by which a drop-forged head is united to a steel tube.

Guns.—The manufacture of naval guns is proceeding substantially upon the same lines as described on page 795 of the "Annual Cyclopædia" for 1888. The principal change in design has been in the direction of length, which has

twelve tons. None of this latter size have been or are likely to be constructed in the near future, as it is a generally accepted idea that such extremely heavy ordnance is not needed for naval purposes. In case the constantly changing conditions of warfare should demand their production, the Bureau of Ordnance has prepared designs in which it is believed that the difficulties experienced with this caliber abroad have been overcome.

The largest guns deemed desirable by our naval authorities are of 13 inches, thirty-five calibers in length of bore, and weighing 135,500 pounds. Four of these pieces are to be mounted on each of the battle ships "Massachusetts," "Indiana," and "Oregon."

As may be seen from the table, 155 heavy guns

TABLE OF UNITED STATES NAVAL BREECH-LOADING GUNS.

CALIBER OF GUN AND NUMBER OF DESIGN.	Length of bore expressed in calibers.		Length of bore expressed in inches.		Total length of gun.	Weight of gun in tons.	Weight of gun in lbs.	Greatest diameter of body of gun.	Twist of rifling.	Number of grooves.	Weight of service-powder charge.		Weight of projectile.	Service-muzzle velocity.	Muzzle energy in foot tons.		Penetration in iron at 1,000 yds.		Penetration in steel at 1,000 yds.		Number of guns completed.
	Cal.	In.	Cal.	In.							Lbs.	Lbs.			Ft.	Ft.-tons.	In.	In.			
4-in., Mark I....	40	157.3	13.7	1.5	3,350	13.0	Zero to 1 in 25.	20	12 to 14	33	2,000	915	8.0	6.0	7						
4-in., R. F.	40	157.5	13.7	1.5	3,400	13.0	do.	30	do.	33	2,000	915	8.0	6.0							
5-in., Mark I....	30	150.3	13.5	2.8	6,190	18.0	1 in 180	20	26 to 29	60	2,000	1,660	9.0	6.5	8						
5-in., R. F.	38	191.5	17.4	8.1	7,000	16.5	1 in 30.	30	28 to 30	50	2,250	1,754	9.1	6.6							
6-in., Mark I....	30	176.0	15.8	4.8	10,775	21.5	1 in 180	24	50	100	2,000	2,773	11.8	8.5	117						
6-in., Mark II..	30	180.0	16.1	4.9	10,900	21.5	do.	24	45 to 48	100	2,000	2,773	11.8	8.5							
6-in., Mark III, of 30 cal.	30	182.5	16.3	4.8	10,800	20.5	Zero to 1 in 25.	24	44 to 47	100	2,000	2,773	11.8	8.5	10						
6-in., Mark III, of 35 cal.	35	218.5	18.8	5.2	11,554	20.5	do.	24	do.	100	2,080	2,990	12.5	9.0							
6-in., Mark III, of 40 cal.	40	248.5	21.3	6.0	13,370	21.0	do.	24	do.	100	2,150	3,204	13.2	9.4	8						
8-in., Mark I*..	30	239.9	21.5	12.3	27,600	80.0	1 in 180	32	105 to 115	250	2,000	6,382	18.2	12.6							
8-in., Mark II..	30	239.9	21.5	13.0	28,800	80.0	do.	32	do.	250	2,000	6,382	18.2	12.6	10						
8-in., Mark III, of 35 cal.	35	290.5	25.4	13.1	29,400	25.8	Zero to 1 in 25.	32	do.	250	2,000	7,498	19.3	13.4							
8-in., Mark III, of 40 cal.	40	330.5	28.7	15.2	34,000	28.8	do.	32	do.	250	2,150	8,011	20.3	14.0	8						
10-in., Mark I, of 30 cal.	30	306.3	27.4	25.7	57,500	40.0	1 in 180	40	225 to 240	500	2,000	13,864	24.8	16.8							
10-in., Mark I*, of 35 cal.	35	343.8	30.5	27.1	60,660	40.0	Zero to 1 in 25.	40	do.	500	2,060	14,996	26.3	17.8	1						
10-in., Mark II, of 30 cal.	30	307.3	27.4	25.1	56,400	39.0	Zero to 1 in 26.8.	40	do.	500	2,000	13,864	24.8	16.8							
10-in., Mark II, of 35 cal.	35	354.9	31.2	27.6	61,900	39.0	Zero to 1 in 25.	40	do.	500	2,100	15,285	26.6	18.0	1						
12-in., Mark I..	35	419.2	36.8	45.2	101,800	45.0	Zero to 1 in 25.	48	425	850	2,100	25,985	33.1	22.0							
13-in., Mark I..	55	454.5	40.0	60.5	135,500	49.0	do.	52	550	1,100	2,100	33,627	37.2	24.5	.....					

been generally increased from five to ten calibers. That is to say, a 6-inch gun of recent construction is from thirty (five times six) to sixty (ten times six) inches longer than one built three or more years ago. The added weight thus entailed is accepted, in view of the considerably increased velocity imparted to the projectile by its being exposed to the accelerating influence of the powder gas through a greater distance, and in view of the fact that the powder now used burns more satisfactorily in the longer guns.

Extensive additions have been made to the plant of the Washington Gun Factory, both as regards its capacity for turning out a larger number of guns of the sizes previously built and its facilities for constructing the larger calibers, including the 16-inch gun of one hundred and

had been completed up to the middle of November, 1891, and not one of all this number has failed even in a slight degree in service or in proof, or has shown weakness or defects requiring either unusual care in its subsequent handling or its return to the factory for repairs. This remarkable showing is believed to be unique in the history of gun-making.

The improvement in the quality and quantity of the machinery at the Washington Gun Factory and the adoption of advantageous methods and settled principles of construction have caused a marked reduction in the time required to manufacture the various pieces of ordnance, and in their cost. The following table shows the gain since high-power-gun construction was begun in this country. At first, the gun factory having

little or no plant, a large portion of the work of assembling and finishing was contracted for with private firms:

CALIBER.	AVERAGE TIME TO PRODUCE IN DAYS OF TEN WORKING HOURS.			AVERAGE COST.		
	1888.	1890.	1891.	By contract with private firms.	At the gun factory, 1888.	At the gun factory, 1890.
6-inch.....	144	75	60	\$3,400	\$2,649	\$1,298
8-inch.....	250	150	105	8,500	3,163	2,722
10-inch.....	300	205	150	.....	6,334	3,500

Except two 5-inch for the "Chicago," none of the other calibers had been completed at the end of 1890. The average time required for each during 1891 was as follows: For the 4-inch, 48 days; for the 5-inch, 55 days; for the 12-inch, 270 days; and the estimated time for the 13-inch is 360 days.

Gunpowder.—The Du Pont Powder Company has produced brown slow-burning powder adapted to all calibers up to the 10-inch, and is now engaged upon that for the 12-inch and 13-inch guns, with every prospect of immediate success. Each class and caliber of gun requires a special sort of powder in order to obtain the best results, and its characteristics can only be determined by trial and experiment. Other firms are at work on these powders, and their products have shown distinct improvement, though not yet up to the required standard. A new kind of square-grained black powder coated with the slower-burning brown variety has been tried in the rapid-fire guns, with good results. But the greatest advance in this department is in smokeless powder. Prof. C. E. Munroe, the chemist of the naval torpedo station at Newport, has invented a powder of this kind which has been developed and successively adapted to the various calibers up to the 4-inch, with excellent results. With about half the usual charges, the velocities obtained have shown a gain of 150 to 200 feet a second, without increase of pressure in the guns. This powder is specially safe and stable; it is uninjured by repeated heating for long periods, and even by boiling in water. Commodore Folger, Chief of the Bureau of Ordnance, is so fully convinced of the progress made in the manufacture of smokeless powders that he expresses his belief that in a very short time the use of ordinary gunpowder will be abandoned, at least in calibers of 6 inches and less, for some form of the smokeless type.

High Explosives.—The use of high explosives in the navy is increasing, and experiments looking to their employment for the bursting charges of shells are being prosecuted. Armor-piercing shell with thick walls and small chamber capacity require a more powerful explosive than the small charge of gunpowder they are capable of containing. Gun-cotton offers great advantages, from the simplicity and safety of its manufacture and handling. The capacity of the apparatus for its production at the torpedo station at Newport has been doubled, and Messrs. E. D. Du Pont & Co. have undertaken the establishment of a gun-cotton plant, stimulated thereto by a large order from the Navy Department, conditional upon such establishment. Emmensite,

the invention of Dr. Emmens, is another explosive that is being experimented with. It seems to keep well without deterioration, is safe to handle, and is powerful in its action. Whether it can be fired through armor before detonation is yet to be determined, but its value for many purposes seems beyond doubt. An experimental 10-inch breech-loading mortar has been installed at the proving ground for testing high explosive shell.

Rapid-fire Guns.—The recent development of rapid-fire guns in the United States has fully kept pace with the progress abroad. The leading types used in the navy are the Hotchkiss, the Driggs-Schröder, and the Dashiell. The Sea-bury system is likewise being experimented with, and promises good results. The largest caliber considered practicable for fixed ammunition by our ordnance officers is the 5-inch, and even in that the weight of the shell has been somewhat reduced. The 6-inch is extensively used in Europe, but as the cartridge (powder charge, projectile, and cartridge case) weighs over 160 pounds, it is unwieldy and probably not much more rapid to handle than if the charge and projectile were separate in the ordinary way. But the 6-inch gun will be fitted with some form of rapid-working breech-closure, probably the Dashiell.

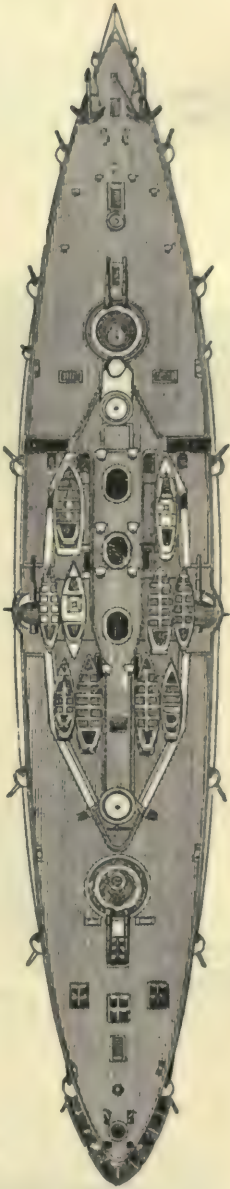
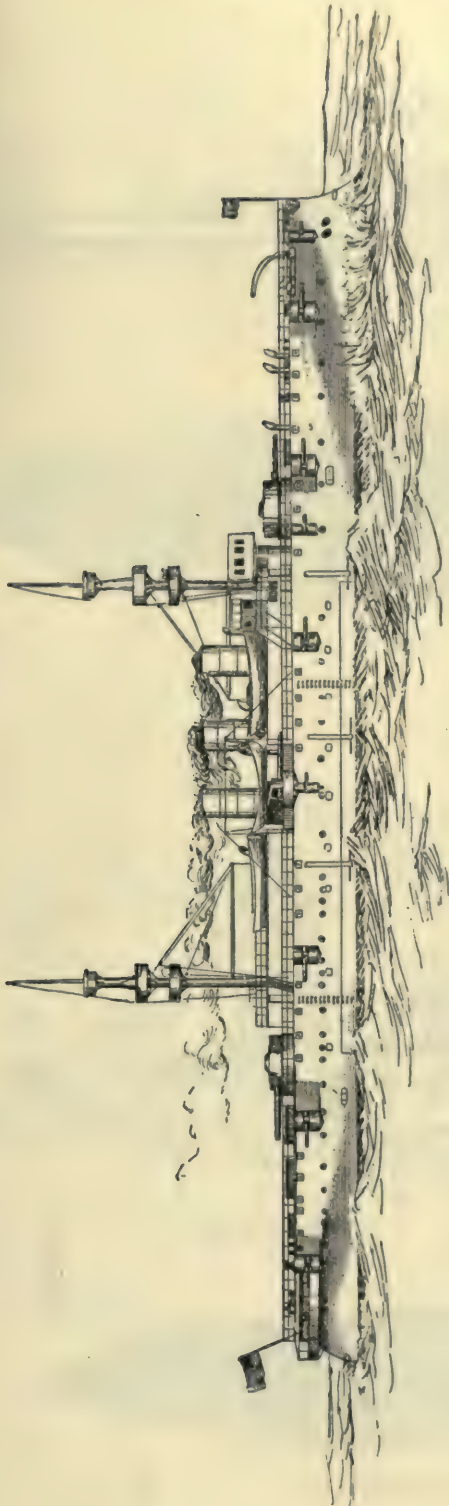
The calibers in service in the navy are the 1-pounder, 3-pounder, 6-pounder, 4-inch (33-pounder), and 5-inch (50-pounder); the quick-firing 6-inch gun is only of the "rapid-fire" type as regards its breech mechanism. From their superior power and accuracy and less weight, the 1-pounder of 37 millimetres bore (about 1.5 inch) and the 3-pounder of 47 millimetres (about 1.9 inch) have practically displaced the revolving cannon of the same caliber. The 3-pounder has fallen somewhat into disfavor, and in turn is being supplanted by the 1-pounder and the 6-pounder. It is regarded as an unnecessary size for most vessels, the others giving sufficient variation in caliber for all ordinary purposes. Too many different kinds of projectiles approaching each other in size are liable to lead to confusion of the ammunition supply during an engagement.

One of the features of the batteries of recently designed cruisers has been the extensive employment of rapid-fire guns of 4 and 5 inch caliber. The 6-inch, of the usual breech-loading type, which has been the standard cruiser gun, has largely given place to them.

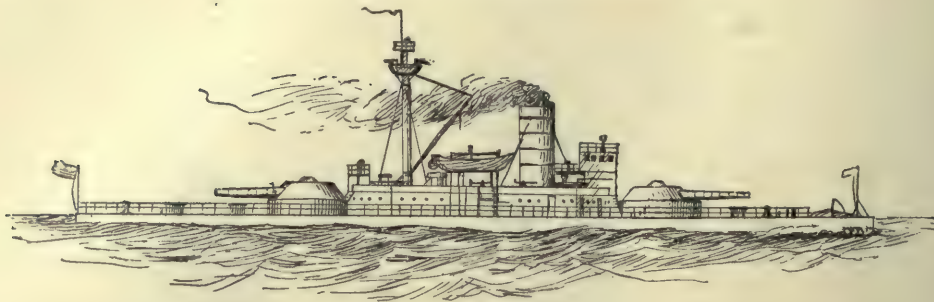
Machine Guns.—The musket-caliber Gatling gun now remains the sole representative of this type of gun, the revolving cannon being displaced, as mentioned above.

Naval Proving Ground.—In February, 1890, a tract of 659 acres at Indian Head, on the Potomac, 26 miles below Washington, was purchased and converted into a naval proving ground for the tests of guns, armor, and projectiles. It has been put in thorough working order, and all tests are now conducted there. Its nearness to the gun factory and the Navy Department, and ready accessibility by water, have greatly facilitated ordnance work.

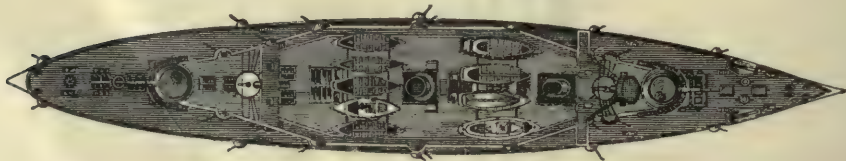
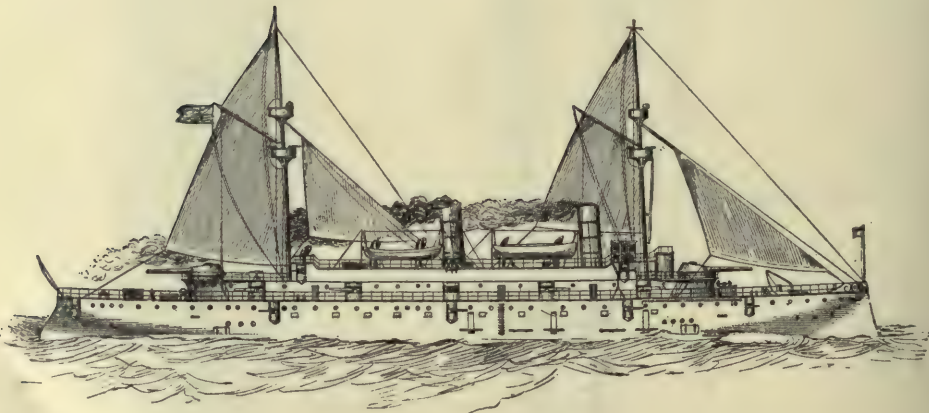
Torpedoes.—Up to Jan. 1, 1892, no automobile torpedoes had been placed upon any vessels of the navy; but it is expected that during the coming



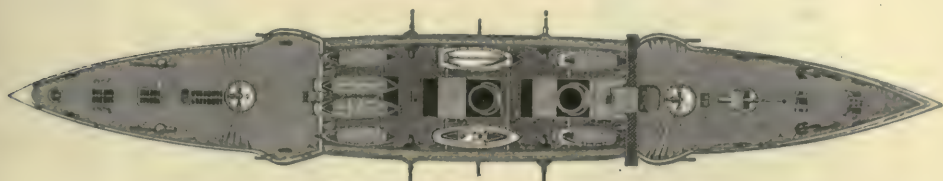
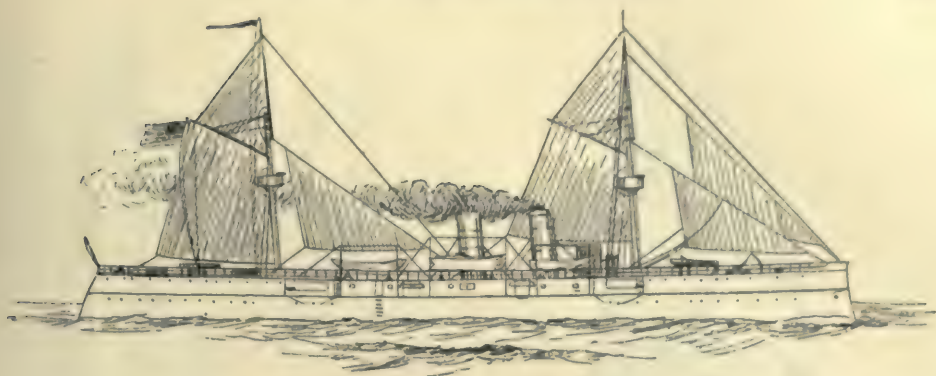
THE "NEW YORK."



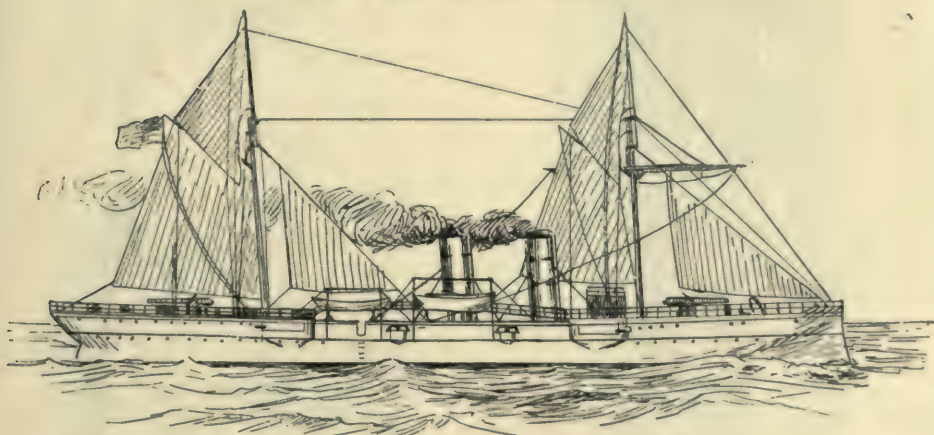
THE "PURITAN."



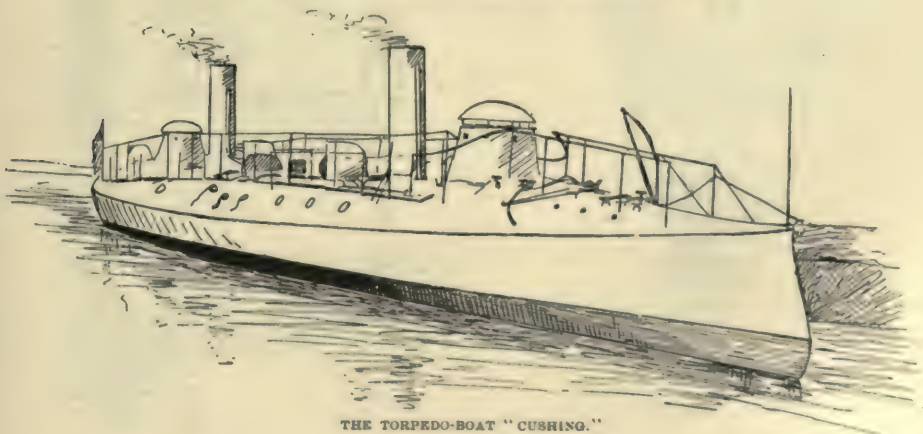
PROTECTED CRUISER NO. 6.



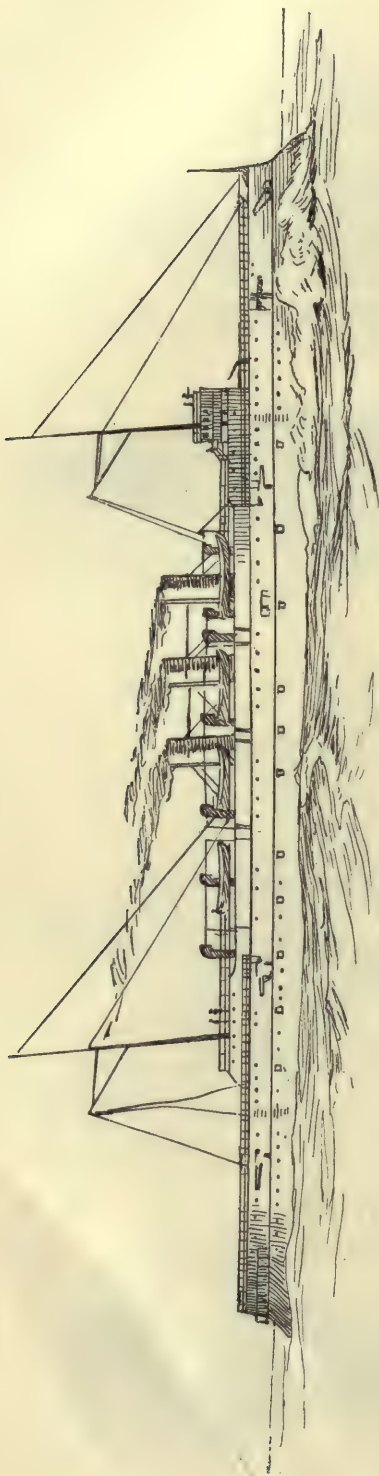
THE "CINCINNATI" AND "RALEIGH."



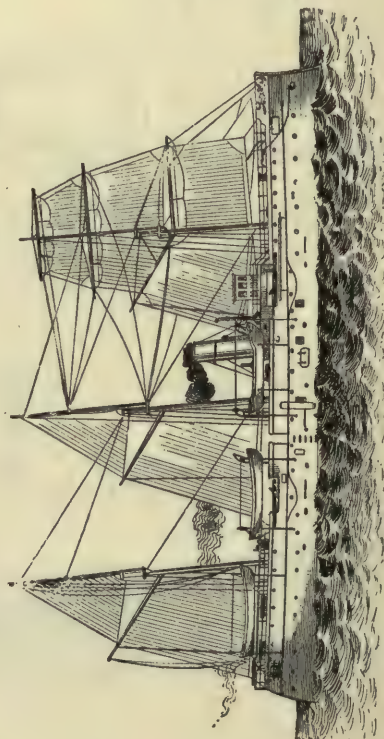
THE "DETROIT," "MONTGOMERY," AND CRUISER NO. 11.



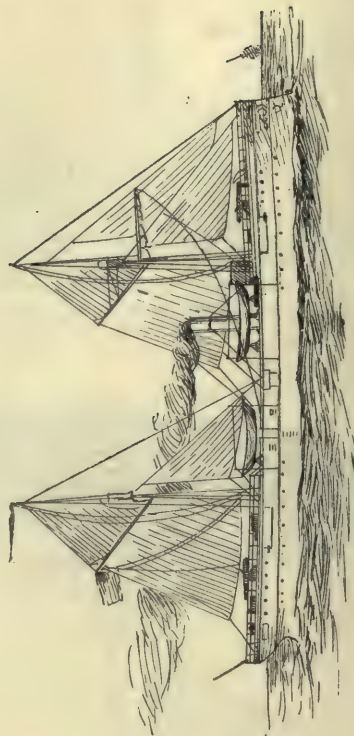
THE TORPEDO-BOAT "CUSHING."



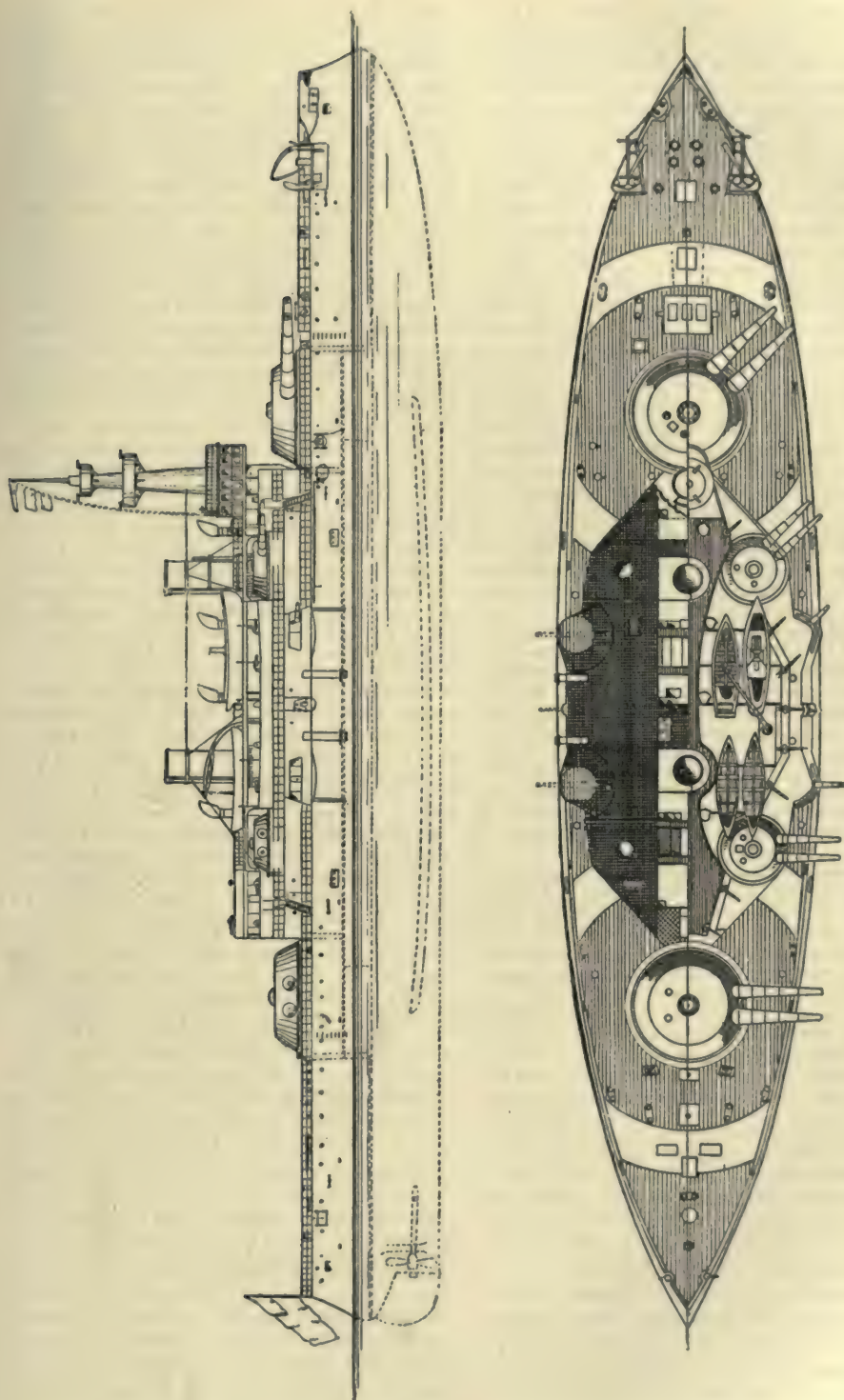
PROTECTED CRUISERS NOS. 12 AND 13.



PRACTICE CRUISER.



THE "MACHIAS" AND GUNBOAT NO. 6.



Main Deck, Superstructure, Bridges, and Storage of Boats.

PLANS OF THE "OREGON," "INDIANA," AND "MASSACHUSETTS," COAST-LINE BATTLE-SHIPS.

year all will receive complete outfits. The Howell Torpedo Company, in their latest model, have produced a highly satisfactory weapon, and deliveries have begun under the contract. At the instance of the department, E. W. Bliss & Co., of Brooklyn, have purchased the patents and secrets of the Whitehead torpedo, and a contract has been made with them for 100 18-inch (diameter) torpedoes of the most recent type. This firm is also nearly ready to begin deliveries. The Hall torpedo is still in the experimental stage. Three Patrick dirigible torpedoes have been purchased for harbor defense, and negotiations have been opened with the Sims-Edison Company, but no purchases have been made from lack of funds for the purpose. This torpedo is also of the dirigible type—i. e., directed by wires extending from the operator to the torpedo.

Submarine Gun.—The projectile of the submarine gun may also be considered a torpedo. It is fired underneath the water from a special form of gun contained within the vessel. It differs from an ordinary torpedo fired from an underwater tube in that the driving force is wholly in the gun, the projectile being merely a missile containing no means of self-propulsion. It is one of Ericsson's last inventions, and had not been fully tested and developed at the time of his death. No trials have been made under the present arrangement.

Torpedo Nets.—The Midgely Wire Belt Company, of Beaver Falls, Pa., have submitted for trial a sample net for defense against torpedoes, which compares favorably in stowage, weight, and flexibility with those in use abroad. Another American company is negotiating for the purchase of the patent rights of the Bullivant (English) net. These will be tested as soon as the submarine gun is completed, and if they are found satisfactory one or the other will be supplied to armored vessels of the navy, to which they are at present to be confined.

Torpedo Boats.—The navy still remains deficient in torpedo boats. The Cushing (torpedo boat No. 1) is completed, and her launching tubes are being placed on board. Another boat of the first class is under construction, and the "Stiletto" has been refitted and makes a fair second-class boat. The submarine torpedo boat described on page 798 of the "Annual Cyclopædia" for 1888 was not built, her design being in several respects unsatisfactory.

Dynamite Gun.—The experiments with the "Vesuvius," whose battery consists of guns of this kind, have not been wholly satisfactory. The valves and breech mechanism are undergoing alterations, which are expected to effect considerable improvement. The design of the vessel is not approved for the purpose intended, and, while the guns are admitted to be valuable, if any are to be hereafter mounted on shipboard the method of installation will be greatly changed, and probably some armor protection given.

Personnel.—In view of the rapid building up of the navy, the number of enlisted men allowed (8,250, including 750 apprentices) will doubtless soon be increased, and, if the new ships are to be manned as soon as completed, this increase must be made within the next two years.

The question of promotion of officers is attract-

ing more and more attention each year as the state of affairs under existing laws becomes worse and worse. As the case now stands most officers will reach the age of fifty years before promotion out of the grade of lieutenant. This is the result of ill-considered crowding of the list immediately after the civil war and of the various acts passed since, by which the number of officers in each grade was reduced. Various plans have been devised to remedy this state of things, and the Secretary of the Navy brought the matter before Congress in his last report.

Naval Reserve.—Much interest has been aroused recently regarding the development of a naval militia in all the seaboard States, and in several of them appropriations were made by the legislatures for the expenses of such organizations on the same footing as the National Guard. In March, 1891, following out the recommendations of Secretary Tracy, Congress appropriated \$25,000 for the armament of such forces. This money was allotted to the several States in proportion to the number of men actually on the rolls. The number certified to as mustered in and serving in the naval militia is as follows: California, 371; New York, 342; Massachusetts, 238; North Carolina, 101; Rhode Island, 54; Texas, 43; total, 1,149. Since the date of that report this number has been much increased and the Lake States have begun to form organizations. An additional sum has consequently been asked for to continue the supply of arms to those at present unprovided. The Navy Department has sought to encourage this movement by every means within its power, and, to facilitate the training by actual service on board ship, the squadron of evolution conducted drills for two weeks at Boston and in Long Island Sound, in which the naval militia of New York and Massachusetts, which States were most advanced in preparation, took part.

Coaling Stations Abroad.—In the event of war our ships would be unable to purchase coal in foreign ports. This has made the establishment of coaling stations abroad a question of great moment, and considerable attention has recently been paid to it. Santa Barbara de Samana, St. Nicholas Mole, and St. Thomas, in the West Indies, Pearl Harbor, in the Hawaiian Islands, the Galapagos Islands, and other points have been considered. A site in the harbor of Pago Pago, Samoa, has been ceded by the Samoan Government, and the station has been established under authority of Congress.

NEBRASKA, a Western State, admitted to the Union March 1, 1867; area, 77,510 square miles. The population, according to each decennial census since admission, was 122,993 in 1870; 452,402 in 1880; and 1,058,910 in 1890. Capital, Lincoln.

Government.—The following were State officers during the year: Governor, John M. Thayer, Republican, succeeded on Jan. 8 by James E. Boyd, Democrat, who was ousted from office on May 5 by decree of the State Supreme Court, and was succeeded by John M. Thayer, the latter holding the office for the remainder of the year. Lieutenant-Governor, Thomas J. Majors; Secretary of State, John C. Allen; Auditor of Public Accounts, Thomas H. Benton; Treasurer, John E. Hill; Attorney-General,

George H. Hastings; Superintendent of Public Instruction, Alexander K. Goudy; Commissioner of Public Lands and Buildings, A. R. Humphrey; Chief Justice of the Supreme Court, Amasa Cobb; Associate Justices, Samuel Maxwell and T. L. Norval. Except Gov. Boyd, these officers are all Republicans.

Contest over State Offices.—According to official returns of the election of 1890, James E. Boyd, the Democratic candidate for Governor, received 71,331 votes, or 1,144 more than his nearest competitor, John H. Powers, the Independent or Farmers' Alliance candidate, and 2,453 more than L. D. Richards, the Republican candidate. For all the other State offices the returns gave the Republican nominees slight pluralities. As in every case the Independent candidates had failed of election by only a few thousand votes, they professed to believe that their defeat had been compassed by fraud and intimidation practiced at the polls by their opponents, and on these grounds they decided to contest the election. Late in November, 1890, notices of contest were served upon Boyd and the successful Republican candidates, and during the following month a large mass of testimony was taken in various parts of the State, bearing upon the charges alleged by the contestants. In the gubernatorial contest case testimony was also taken late in December in behalf of Powers, tending to show that the father of Boyd had never been naturalized, and that the son, not being a citizen, was ineligible to the office of Governor. When the Legislature assembled in January, all this testimony was ready for its examination. The first duty of that body in determining the result of the election is prescribed by the State Constitution as follows:

The returns of every election for the officers of the executive department shall be sealed up and transmitted by the returning officers to the Secretary of State, directed to the Speaker of the House of Representatives, who shall, immediately after the organization of the House, and before proceeding to other business, open and publish the same in the presence of a majority of each House of the Legislature, who shall for that purpose assemble in the hall of the House of Representatives. The person having the highest number of votes for either of said offices shall be declared duly elected. Contested elections for all of said offices shall be determined by both Houses of the Legislature, by joint vote, in such manner as may be prescribed by law.

Pursuant to these provisions, the two houses met in joint convention on Jan. 7. A resolution was then offered by the Independents, proposing that action upon the returns be suspended until the pending contest over State officers should be decided by law; but the presiding officer of the convention, Lieutenant-Governor Meiklejohn, a Republican, ruled that no business could be considered or acted upon by the convention till the returns were opened and published according to the constitutional requirement above quoted. This ruling was followed by scenes of confusion, in which the Independents attempted to carry an adjournment of the convention, but the Lieutenant-Governor refused to put the motion therefor. The Speaker of the House, S. M. Elder, an Independent, then refused to open and publish the returns as required by the Constitution, and in this course was supported by his

party associates. A motion for a recess (not adjournment) until the following day was finally entertained and carried. When the convention reassembled on Jan. 8, Speaker Elder was served with a mandamus from the State Supreme Court ordering him to open and publish the returns, and, in obedience thereto, the canvass proceeded, Boyd was declared elected Governor, and the Republican candidates were declared elected to the other offices. The proceedings of the day were marked by disorder, and armed officers of the law were in attendance.

All the persons thus declared elected qualified themselves, and all obtained immediate possession of their offices, except Gov. Boyd. To him Gov. Thayer refused to surrender the executive apartments, on the ground that he was not eligible to the office of Governor. Other quarters in the State House were, however, assigned him while Gov. Thayer fortified himself in the executive chambers, and for a time each contestant claimed to act as the State Executive. On Jan. 9, at the time of his refusal to vacate his office, Gov. Thayer filed in the State Supreme Court a petition praying that a writ of *quo warranto* issue against Gov. Boyd for the purpose of trying the title of the latter to the office claimed by him. On Jan. 13 the court ordered the writ to issue, saying at the same time that, pending the trial of the cause, it recognized Boyd as the legal Governor of the State by virtue of the declaration of the joint convention of the Legislature, and that Gov. Thayer would lose none of his legal rights by quietly submitting to the situation. In view of this assurance of the court, the latter, on Jan. 15, yielded up the executive apartments to Gov. Boyd.

Meanwhile, in the Legislature the Independents had passed through both houses a joint resolution appointing Jan. 20 as the day when the joint convention should meet for the purpose of hearing the contested election cases. On that day Gov. Boyd and the other contestees submitted to the convention a protest against its proceedings, on the ground that the joint resolution under which it had met had not been signed by the Lieutenant-Governor as President of the Senate, nor submitted to the Governor for his approval. The convention therefore passed a resolution asking the opinion of the State Supreme Court upon the question whether such a resolution must be submitted to these officials for their signatures, when, as in the present case, they were both interested in the case as contestees. To this question the court, on Jan. 20, replied that the signature of the Lieutenant-Governor and the approval of the Governor were clearly necessary, according to the terms of the State Constitution, and that such a resolution, if vetoed, must be passed by a three-fifth vote of both Houses in order to become law. The Independents, on learning this, dissolved the joint convention and decided to begin over again. A new joint resolution, fixing Feb. 17 as the day for the meeting of the joint convention, was introduced, but the impossibility of obtaining the Governor's signature thereto was conceded. A few of the Independents became disheartened at the prospect of passing it over a veto, and on Feb. 5 practically gave up the fight by joining with the Democrats

and Republicans of the House in passing a resolution requesting Gov. Boyd to deliver his inaugural address. A few days later the Senate voted down the joint resolution, and with this defeat ended all hopes of the contestants.

In the *quo warranto* suit, *Thayer v. Boyd*, a motion to dismiss was early filed by the respondent on the ground that the relator had no title or authority to maintain the suit, and that the facts stated did not form a good cause of action. Early in March, after a hearing, the court overruled this motion and ordered the respondent to file his answer.

Arguments upon the merits of the case were heard toward the middle of the month, and on May 5 the court rendered an opinion to the effect that Boyd was not a legal citizen of the United States, and was therefore ineligible to the office to which he had been elected. The fact that his father, being an alien, had never completed his naturalization as a citizen during the minority of his son, who was born in a foreign country, was held to be conclusive against the citizenship of the latter. It was further decided that the alien inhabitants of the Territory of Nebraska at the time of its admission as a State did not become citizens of the United States by virtue of the acts of Congress admitting the State into the Union. In view of these facts, the court held that the election of 1890 for Governor was void, and that the person elected Governor at the preceding election was entitled to hold over after the expiration of his term for the term succeeding. From these conclusions of the majority of the court Justice Maxwell dissented. Pursuant to the majority opinion, however, judgment of ouster was entered against Gov. Boyd, in obedience to which he immediately surrendered to Gov. Thayer the Executive office. His counsel then carried the case up to the United States Supreme Court upon a writ of error, but no decision had been reached by that tribunal at the close of the year.

Legislative Session.—The Legislature assembled for its regular biennial session on Jan. 6, and adjourned on April 4. Its action in the controversy over the State executive offices is recorded in the foregoing paragraph. Both Houses were controlled by members of the new Independent or Farmers' Alliance party. Hostility to railroads was one of their cardinal doctrines, and their avowed purpose was to pass at this session some law compelling a reduction of railroad tariff rates. Several radical measures were introduced and were the subjects of prolonged and heated debates. One of these, known as the Newberry Maximum Freight-rate bill, passed the House, and after causing a dead lock in the Senate for several days, was carried in that body and submitted to Gov. Boyd. In the bill an attempt was made to embody in a law for Nebraska the lowest rates in force in Iowa. A reduction from existing rates of from 40 to 60 per cent. was contemplated. Gov. Boyd, believing that such an act, if enforced, would bankrupt every road in the State, returned the bill without his approval on the last day but one of the session, and it failed to pass over his veto. A secret-ballot law was enacted at this session. Under its provisions all ballots used at elections shall be printed at county expense, except in municipal elections, when they shall be printed at municipal expense.

Candidates for office may be nominated by the convention or caucus of any political party that polled at the last election 1 per cent. of the entire vote cast in the State, county, or other division for which the nomination is made, or by nomination papers signed by electors of the district for which the nomination is made to the number of 500 when the nomination is for a State office, and to a number not exceeding 50 where the office is to be filled by the electors of a city, county, or other division less than the State, and to a number not exceeding 20 when the office is to be filled by the electors of a township, precinct, or ward, provided that the number of signatures need not exceed one fourth of the total number of voters when the nomination is for other than a State office. Ballots shall be white, printed with black ink. Each ballot shall contain the name of every candidate duly nominated, the names of all candidates for each office being arranged under the designation of the office in alphabetical order, except that the names of electors of President and Vice-President, presented in one certificate of nomination, shall be arranged in a separate group. At the end of the list of candidates for each office a blank space shall be left for writing in the names of other candidates. Each polling place shall be provided with a sufficient number of booths or compartments, which shall be furnished with such supplies and conveniences as shall enable the voter to prepare his ballot, and in which electors may mark their ballots screened from observation. The number of such booths shall not be fewer than one for every fifty voters or fraction thereof registered in the district or precinct. Before delivering a ballot to an elector, two of the election officers shall write their names in ink upon the back. The elector shall indicate his choice by marking a cross with ink opposite the name of his candidate, or by writing in the name of his candidate. He shall then fold the ballot so as to conceal his choice, and deliver it to the judge of election, who shall deposit it in the ballot-box. Electioneering within any polling place or within 100 feet thereof is forbidden.

Another important act of the session regulates and defines at length the rights and duties of public warehousemen. The mixing or shipping of different grades of grain together is forbidden, except by consent of the owner. Warehouses are divided into three classes, and they shall receive, ship, store, and handle the property of all alike without discrimination.

Eight hours are declared to constitute a legal day's work for all classes of mechanics, servants, and laborers, except those engaged in farm or domestic labor.

The State was re-districted into six congressional districts, as follow:

- 1.—The counties of Cass, Otoe, Nemaha, Richardson, Pawnee, Johnson, and Lancaster.
- 2.—Sarpy, Douglas, and Washington.
- 3.—Burt, Thurston, Dakota, Dixon, Cuming, Dodge, Colfax, Stanton, Wayne, Cedar, Knox, Pierce, Madison, Platte, Nance, Boone, Antelope, and Merrick.
- 4.—Saunders, Butler, Seward, Saline, Gage, Jefferson, Thayer, Fillmore, York, Polk, and Hamilton.
- 5.—Hall, Adams, Webster, Franklin, Kearney, Phelps, Harlan, Gosper, Furnas, Red Willow, Frontier, Hitchcock, Hayes, Perkins, Chase, Dundy, Clay, and Nuckolls.

6.—Sioux, Scott's Bluff, Banner, Kimball, Dawes, Box Butte, Cheyenne, Sheridan, Deuel, Cherry, Grant, Arthur, Keith, Lincoln, McPherson, Hooker, Thompson, Logan, Dawson, Custer, Blaine, Brown, Keya Paha, Rock, Loup, Holt, Garfield, Valley, Sherman, Buffalo, Howard, Greeley, Wheeler, and Boyd.

An act to provide cheaper text-books in the schools requires school boards to purchase all text-books necessary in their district, and to make contracts with publishers for supplying such books for a term of years not exceeding five. All books so purchased shall be held as the property of the district, and shall be loaned to pupils free of charge, except that pupils shall be liable for damage or loss. Pupils or parents, if they so desire, may purchase their text-books of the board, and shall be charged therefor only the cost price.

For the purpose of relieving the necessities of people in the counties afflicted with drought in the preceding summer, an appropriation of \$100,000 was passed, and a commission was appointed to purchase supplies therewith and to superintend their distribution. By another act the Governor and the Secretary of State were authorized to issue 4-per-cent. bonds, payable in five years, to the amount of \$100,000, the proceeds from the sale of which shall be used in the purchase of supplies and seed grain for distribution among people made destitute by the loss of their crops during 1890. The purchase and distribution were intrusted to a relief board of nine persons appointed by the Governor with the advice of the Senate. For the purpose of paying the bonds at maturity an annual tax of one eighth of a mill was levied. The county boards were authorized to use any surplus general funds in the purchase of food, fuel, seed grain, and feed for teams, and to distribute these among destitute and needy farmers, taking in payment their notes, payable in three years at 7 per cent. interest. The counties were also empowered by popular vote to authorize the issue of bonds in amount not exceeding 3 per cent. of their valuation and not exceeding \$20,000 in any case, and to use the proceeds from the sale of such bonds in the purchase of seed grain and feed for teams, the farmers giving their notes therefor, payable in five years with 7 per cent. interest.

To secure an exhibit of the resources of the State at the World's Fair in Chicago, \$50,000 was appropriated, and a commission was appointed to attend to its expenditure. A Girls' Industrial School for Juvenile Delinquents was established at Geneva, and \$40,000 was appropriated for the erection of buildings, the land therefor being given to the State. For additional buildings at the Institution for Feeble-minded Youth, near Beatrice, \$25,000 was appropriated, and for two wings to the main building of the Hospital for the Insane, at Hastings, \$60,000.

Two amendments to the State Constitution were proposed for submission to the people at the general election in 1892—one providing for the election of railroad commissioners by the people, the other providing for the preservation and investment of the permanent school funds.

Other acts of the session were as follow:

Repealing the act of 1889 establishing a bounty for the manufacture of sugar.

Providing for the establishment of agricultural and horticultural experiment stations at Culbertson and Ogallala.

To regulate the business of building and loan associations.

To protect associations and unions of working men in the use of labels, trade-marks, and other forms of advertising goods manufactured by them.

To enable associations of persons to become bodies corporate for the purpose of acquiring and holding real estate, issuing bonds thereon, and borrowing money.

Requiring railroad companies to equip all engines and cars with efficient and safe automatic couplers and brakes.

Creating the county of Boyd out of the unorganized territory north of Holt County.

To require registers of deeds to keep a record of mortgage indebtedness, and to make annual reports therefrom.

To prohibit the keeping of girls under eighteen years of age, and boys under twenty-one years, in any house of ill fame.

Making it a felony to sell or give fire-arms or ammunition to any Indian not a citizen.

Making it a felony to sell or give malt, spirituous, or vinous liquors or intoxicating drinks to any Indian not a citizen.

To authorize the organization of mutual-insurance companies.

To establish a State board of health, and to regulate the practice of medicine.

Assenting to the act of Congress appropriating money for the support of colleges of agriculture and the mechanic arts in the several States.

Railroads.—The number of miles of railroad assessed in 1891 by the State Board of Equalization was 5,418, against 5,157 for the year preceding. Although the mileage increased, the total assessed valuation of railroad property for the year was fixed at \$29,265,917.80, or \$588,303.25 less than in 1890, the valuation per mile being reduced from \$5,788.42 to \$5,401.45.

Valuation.—The total assessed valuation of the State for 1891, as fixed by the State Board of Equalization, was \$183,159,200.48, a decrease of \$1,611,044.06 over the valuation of 1890.

Relief Commission.—The final report of the State Relief Commission, appointed by the Legislature of this year to distribute provisions and grain to needy farmers, shows that the total amount of money at its disposal was \$200,785.91, of which \$195,687.67 was expended as required by law. Provisions were supplied to 41,663 persons, and grain to 13,662. The amount of grain distributed was as follows: Wheat, 57,796 bushels; corn, 38,445 bushels; barley, 10,818 bushels; oats, 12,779 bushels; potatoes, 6,680 bushels.

Political.—A justice of the Supreme Court and two regents of the State University were to be chosen this year at the November election. The first ticket in the field was nominated by the Prohibitionists in convention at Lincoln on Aug. 5. It contained the names of R. W. Richardson for justice of the Supreme Court, and William Gorst and Mrs. Caroline M. Woodward for regents of the State University. The resolutions adopted by the convention favor Government ownership of railroads and telegraph lines, a graduated income tax in place of the internal-revenue system, service pensions for soldiers, womn suffrage, and the election of United States Senators by direct vote of the people. An increase of the circulating medium was demanded, and the liquor traffic was denounced in

severest terms. After the convention it was discovered that the candidate for justice of the Supreme Court was ineligible to that office, and the name of Mrs. Ada M. Bittenbender was substituted on the ticket.

On Aug. 18 the State convention of the Independent or Farmers' Alliance party met at Hastings and nominated the following ticket: For justice of the Supreme Court, Joseph W. Edgerton; for regents of the State University, A. d'Allemand and E. A. Hadley. A long platform was adopted, which demands that the Legislature shall enact a freight-rate law establishing rates as low as those in force in Iowa; that corporations enjoying public franchises shall assume public burdens and be liable in damages for injuries of their employés sustained while on duty; that laws be enacted prohibiting alien ownership of land and discouraging land speculation; and that all lands held by railroads and other corporations, and not actually needed, be reclaimed and held for actual settlers. It also denounces Gov. Boyd's veto of the maximum freight bill as an outrage perpetrated in the interest of railroads; expresses sympathy with wage earners who are seeking to enforce the eight-hour law; declares in favor of a service pension bill, a bill equalizing soldiers' bounties, and a bill pensioning prisoners of war; pledges the support of a party to the Soldiers' and Sailors' Home; denounces the system of convict labor as maintained in the State by the Republican party; and asks Congress to provide for the establishment of postal savings banks. A resolution was adopted favoring the exclusion from the schools of United States histories which do not include the fireside history of the country, and another favoring the appointment of a State board of arbitration, with power to enforce its findings.

On Sept. 17 the Democratic State Convention met at Grand Island and nominated Jefferson H. Broady for justice of the Supreme Court, and two candidates for regents of the State University. The platform adopted condemns the McKinley bill and the reciprocity ideas of the National Administration, favors a tariff for revenue only, congratulates the people on the defeat of the Prohibition amendment, denounces the ousting of James E. Boyd from the governorship, arraigns the Republican State Board of Transportation for failing to reduce freight rates, favors protection of labor, liberal pensions, the election of railroad commissioners by the people, and the passage of a law governing freight charges, and contains the following resolutions:

We condemn the giving of subsidies and bounties of every kind as a perversion of the taxing power. We are in favor of the election of United States Senators by direct vote of the people. We denounce all trusts, pools, and combines, and we favor such action, State and national, as will forfeit to the public all franchises and property owned or used by corporations or other concerns to form trusts in manufactures, trade, or commerce, to the injury and spoliation of the people, and also to insure the punishment criminally of individuals conspiring against the public welfare.

We favor the free coinage of silver, and that it may be made a full and legal tender for all debts, private or public, and denounce as unjust and dis-

honest the provision of the law recently enacted allowing parties to stipulate against payment in silver and silver certificates, thus setting up one standard for the rich and another for the poor.

The Republican State Convention was held at Lincoln on Sept. 24. It resulted in the nomination of A. M. Post for justice of the Supreme Court, over four other candidates, one of whom was Chief-Justice Amasa Cobb, who sought a renomination. For regents of the State University, H. P. Shumway and C. H. Marple were nominated. The platform commends the National Administration, approves of reciprocity and the protective tariff, and favors an additional World's Fair appropriation by the next Legislature. These resolutions also appear:

We approve of the silver-coinage act of the present Administration, by which the entire product of the silver mines of the United States is added to the currency of the people, but we denounce the Democratic doctrine of the free and unlimited coinage of silver as a financial policy liable to precipitate the people of every city and every State in the Union in a prolonged and disastrous depression, and delay the revival of business enterprise and prosperity so ardently desired, and now so apparently near.

We are heartily in favor of the general provisions of the interstate commerce act, and we demand the regulation of all railroad and transportation lines in such a manner as to insure fair and reasonable rates to the producers and consumers of the country. We favor such legislation as will prevent all illegal combinations and unjust exactions by aggregated capital and corporate powers. We insist upon the suppression of all trusts, combines, and schemes designed to artificially increase the price of the necessities of life.

Early in the canvass the Democratic ticket was withdrawn, and the contest narrowed down to one between the friends and enemies of the Farmers' Alliance and its doctrines. At the November election the Republican candidate for Justice of the Supreme Court was elected by a vote of 76,447 to 73,311 for Edgerton, Independent, and 7,322 for Bittenbender, Prohibitionist. For regents of the State University, Marple, the Republican candidate, and Hadley, Independent, were elected.

NETHERLANDS, a constitutional monarchy in western Europe. The legislative body, called the States-General, consists of a First Chamber of 50 members, elected by the provincial states, and a Second Chamber containing 100 Deputies, elected by male citizens twenty-three years old, who pay 10 guilders of land taxes, or a personal-property tax beyond the limit of partial exemption, or who are lodgers under the law. About one man in three has a vote. The whole of the Second Chamber retires at the end of the four years' period. In the Upper Chamber one third of the members are replaced every three years. New bills can only be originated by the Government or by members of the Second Chamber. Amendments to the Constitution must be passed by both Chambers, which are thereupon dissolved, and the amendments are submitted for confirmation to newly elected Chambers, requiring a two-thirds vote. The reigning sovereign is Wilhelmina Helena Pauline, born Aug. 31, 1890, daughter of the late King Willem III and his second wife, Princess Emma of Waldeck, who acts as Regent during the minority of the infant Queen. The ministry in the beginning of 1891 was composed of the following mem-

bers: President of the Council and Minister of the Colonies, Baron Mackay, appointed Feb. 17, 1890; Minister of the Interior, Dr. A. F. de Savornin Lohman, appointed Feb. 17, 1890; Minister of Foreign Affairs, C. Hartzen, appointed April 20, 1888; Minister of Finance, Dr. K. A. Godin de Beaufort, appointed April 20, 1888; Minister of Justice, Dr. G. L. M. K. Ruijs van Beerenbroeck, appointed April 20, 1888; Minister of Marine, H. Dyerinck, appointed April 20, 1888; Minister of War; J. W. Bergansius, appointed April 20, 1888; Minister of Public Works and Commerce, J. P. Havelaar, appointed April 20, 1888. (For area and population, see "Annual Cyclopædia" for 1890.)

Finances.—In the budget for 1891 the revenue was estimated at 126,536,025 guilders, of which 44,200,000 guilders are derived from excise, 23,638,000 guilders from indirect taxes, 12,302,175 guilders from the land tax, 11,515,000 guilders from the personal tax, 6,980,000 guilders from the post-office, 5,310,800 guilders from import duties, 4,464,000 guilders from patents, 4,355,000 guilders from state railways, 2,480,000 guilders from domains, 1,350,000 guilders from navigation dues, 1,270,000 guilders from telegraphs, 661,500 guilders from the state lottery, 231,000 guilders from the tax on gold and silver, 140,000 guilders from shooting and fishing licenses, and 7,639,950 guilders from other sources. The total expenditure is set down as 139,930,839 guilders, of which 34,942,118 guilders are for the public debt, 23,066,805 guilders for financial administration, 22,120,220 guilders for public works, 21,269,860 guilders for the army, 13,894,342 guilders for the navy, 11,192,117 guilders for the interior, 5,254,964 guilders for justice, 1,239,584 guilders for the colonial department, 756,302 guilders for foreign affairs, 654,527 guilders for legislation, 650,000 guilders for the civil list, and 50,000 guilders for contingencies. The excise duties in 1889 produced 44,136,909 guilders; direct taxes, 27,491,491 guilders; indirect taxes, 24,956,939 guilders; customs duties, 5,282,966 guilders. These taxes amounted to 22½ guilders per head of the population. The funded debt in 1891 amounted to 1,096,517,160 guilders, of which 630,567,200 guilders pay 2½ per cent. interest, 340,912,900 guilders were raised in 1886 at 3½ per cent. interest, 94,942,800 guilders pay 3 per cent., and the bulk of the remainder 3½ per cent. The interest charge on the funded debt was 31,708,649 guilders; the sinking fund, 2,673,900 guilders; expenses of the floating debt, 500,000 guilders; annuities, 59,569 guilders. There are 15,000,000 guilders of paper money in circulation.

(For statistics of the army and navy, see "Annual Cyclopædia" for 1890.)

Commerce and Production.—The value of the special imports increased steadily from 1,091,487,000 guilders in 1885 to 1,245,287,000 guilders in 1889. The value of the exports of domestic products increased from 891,036,000 guilders to 1,114,806,000 guilders in 1888, and in the following year declined to 1,094,078,000 guilders. Of the imports in 1889, 23.9 per cent. came from Great Britain, 19.4 per cent. from Prussia, 14.2 per cent. from Belgium, 11.5 per cent. from the Dutch East Indies, 6.1 per cent. from the United States, 2.4 per cent. from Brit-

ish India, 2 per cent. from Hamburg, 1.8 per cent. from France, and 9.6 per cent. from other countries. Of the exports, 43.6 per cent. went to Prussia, 26 per cent. to Great Britain, 12.6 per cent. to Belgium, 6.3 per cent. to the Dutch East Indies, 2 per cent. to the United States, 1.7 per cent. to Hamburg, 1.6 per cent. to Russia, 0.9 per cent. to France, 0.8 per cent. to Italy, and 4.3 per cent. to other countries. Of the soil of the Netherlands, which has a total area of 3,299,906 hectares, 712,524 hectares are barren heath, 146,868 hectares are marsh and water, 44,309 hectares in roads and dykes, 92,353 hectares more are untaxed, 38,850 hectares are covered with buildings and residences, 1,144,066 hectares are in pasture, 859,844 hectares are under field crops, 54,124 hectares are in gardens and orchards, and 226,968 hectares are under forest. Of the farming land, nearly 60 per cent. is cultivated by the owners. The imports of wheat in 1889 were valued at 69,445,000 guilders; of rye, 48,964,000 guilders; of wheat and rye flour, 19,984,000 guilders; exports of wheat, 35,562,000 guilders; of rye, 25,501,000 guilders; of flour, 13,309,000 guilders. The total imports of cereals and flour were 166,327,000 guilders in value, and the exports 95,138,000 guilders. The imports of iron and steel and manufactures thereof were valued at 129,417,000 guilders, and the exports at 87,419,000 guilders; imports of drugs at 165,995,000, and exports at 130,010,000 guilders; imports of textile materials and manufactures at 104,277,000, and exports at 99,571,000 guilders, not including flax, the export of which amounted to 130,010,000 guilders. The imports of coffee were 36,587,000, and the exports 26,053,000 guilders. There is a large trade with England in live animals, margarine, and dairy products, the exports of butter amounting to 47,652,000 guilders in 1889, and those of cheese to 11,207,000 guilders. The imports of mineral oil were 14,713,000 guilders. Coal was imported to the amount of 40,588,000 guilders, the quantity mined in the country being valued at only 229,569 guilders. There were 3,573 steam factories, having 4,280 engines.

Change of Ministers.—The Government of Lohman, Hartzen, and Baron Mackay, representing the Catholic Clerical party and the Evangelical party in the Protestant districts called the Antirevolutionists, took office in 1888—after the first general election subsequent to the extension of the suffrage to persons paying 10 guilders in taxes had resulted in a Second Chamber composed of 45 Liberals, 26 Catholics, 27 Antirevolutionists, 1 Conservative, and 1 Socialist—for the purpose of establishing the system of state-aided confessional schools on the English model in the place of the system of secular education introduced by the Liberals in 1878. This was accomplished by the new school law of 1889. The Cabinet was also pledged to a reform of the colonial administration, in which it was less successful, and promised to introduce a reorganization of the army and navy on the basis of universal suffrage, but has delayed bringing in measures to carry out this project in a thorough manner, not on account of the opposition of the Liberals, who accept the idea, but owing to the practical difficulty of imposing a burden of such magnitude on the people. As it made no

progress toward the fulfillment of its programme and drew criticism upon itself—much criticism on financial and other grounds—the ministry has lost prestige, and Minister Lohman declared that it would resign if the elections of June, 1891, for the Second Chamber went against the Government. Rear-Admiral Dýserineck, the Minister of Marine, had resigned in March, owing to an adverse vote of the Chamber, and was replaced by Capt. Kruys. In the elections the Antirevolutionists lost 9 and the Catholics 2 seats. The new Chamber was composed of 57 Liberals, 19 Antirevolutionists, 24 Catholics, and 2 Radicals. The Catholic leader Schaepman was ousted by a Liberal and the Socialist Domela Nieuwenhuis by a Radical, while the sole representative of the old Conservative party was defeated. On July 8 the Cabinet handed in their resignations.

Eight weeks after the elections had resulted in favor of the Liberals, the popular and accomplished burgomaster of Amsterdam, Dr. van Tienhoven, finally overcame the many difficulties that stood in the way of his getting together a ministry composed of Liberal elements purely. It was constituted on Aug. 20, and consists of the following members: President of the Council and Minister of the Interior, Dr. Tak van Poortvliet; Minister of Foreign Affairs, Dr. van Tienhoven, who had been Minister of the Waterstaat in 1877-'79; Minister of Finance, Dr. Pierson; Minister of Justice, Dr. H. J. Smidt, who held in 1877-'79 the same portfolio in the Kappeyne ministry; Minister of Marine, J. C. Jansen; Minister of War, Lieut.-Col. Seyffardt; Minister of the Waterstaat, Commerce, and Industry, C. Lely; Minister of the Colonies, Dr. Baron van Dedem.

The retiring ministry had brought in a new military bill and one for the insurance of workmen against accidents, but was able to make no progress with them, even with the help of Moderate Liberals. The former proposed to incorporate in the army annually 16,300 of the 40,000 young men who would be liable to serve on the introduction of obligatory service, which would provide a standing army of 45,000 men, a garrison army of 20,000 men, and a reserve force of 20,000 men, besides 50,000 Landwehr men and a complementary reserve of 209,500. Clergymen and divinity students would be exempt. The Schutteryen or national guards would be abolished, but the Landsturm would include all able-bodied citizens up to the age of forty who are not enrolled in the army or auxiliary forces. In the place of this sweeping scheme of reorganization the new Minister of War introduced a provisional measure moderately increasing the army. The new ministry was pledged to a large extension of the suffrage, but promised not to give priority to this question. It bound itself by a formal declaration to execute the primary-education law and maintain the observance of Sunday. The budget for 1892, which was presented on Sept. 18, estimated the revenue at 127,600,000 guilders and the expenditure at 130,000,000 guilders, leaving a deficit of 2,600,000 guilders to be met by increasing the taxes. The sum of 5,000,000 guilders for the demonetization of silver that has figured in former budgets was omitted. There was a larger sum appropriated for public instruction, but less for public works, than in the previous budget. Measures were promised

for covering or reducing the accumulated deficit of 36,000,000 guilders, and also a bill to secure a more equitable distribution of taxation.

Colonies.—The Dutch have a colonial empire in the East and West Indies covering 766,137 square miles, with a population of 29,550,000 souls. Of these, 29,475,613 are found in the East Indies, embracing Java and Madura, Sumatra, Banca, the Riau-Lingga archipelago, Billeton, the west coast and the Dutch districts in the south and east of Borneo, Celebes, the Molucca Islands, the Timor archipelago, Bali and Lombok, and New Guinea east of 141° of east longitude. These islands have a total area of 719,674 square miles. The European population in the beginning of 1889 consisted of 28,805 males and 23,731 females, of whom 21,097 males and 20,484 females were born in the East Indies.

The revenue of Netherlands India for 1891 was estimated at 116,414,315 guilders, and expenditure at 136,840,646 guilders, leaving a deficit of 20,426,331 guilders. The receipts are made up of 11,581,430 guilders from sales of Government coffee in Holland, 207,900 guilders from sales of cinchona, 5,822,650 guilders from sales of tin, 795,000 guilders from railroad revenue in Holland and 1,430,597 guilders from other receipts in Holland, 17,080,000 guilders from sales of opium, 10,340,000 guilders from import, export, and excise duties, 16,067,000 guilders from land revenue, 12,067,000 guilders from sales of coffee in Java, 7,742,000 guilders from sales of salt, and 33,299,638 guilders from other sources of revenue in the East Indies. The accounts for 1890 were expected to show a surplus. The total receipts in the Netherlands were 19,837,577 guilders, and in the East Indies 96,576,738 guilders. Of the expenditure, about one third goes for the maintenance of the army and navy, and the same proportion for the general administration of the Government in the East Indies and the Netherlands. The supreme administrative and executive authority in East India is vested in a governor-general, who is assisted by a council of 5 members, who advise him on legislative questions. Dr. C. Pýnacker Hordýk was appointed Governor-General on June 19, 1888. The army of Netherlands India consists of 1,406 officers and 33,169 men, of whom 14,984 are Europeans. The new Minister of the Colonies has declared in favor of the continuance of the war in Atcheen by the system of blockading the coast of that part of Sumatra, in the place of active offensive operations. The average production of coffee on Government lands before 1890 was 520,000 piculs (of 133½ pounds) a year. The harvest for 1891 was estimated at 383,796 piculs. The railroads have a total length of 790 square miles. In November, 1891, the Dutch Chamber approved a bill for the construction of railroads to connect Batavia, Bantam, Malang, Blitar, Probolingó, and Panaræken.

The West India colonies of the Netherlands consist of Dutch Guiana or Surinam, on the north coast of South America, and the island of Curaçoa. The Government of Dutch Guiana is in charge of a governor, assisted by a council of officials, nominated and elected members. The area of the colony is 46,060 square miles, and the population consists of 29,204 males and 28,161 females. Paramaribo, the capital, has 27,752 in-

habitants. The revenue in 1888 was 1,325,000 guilders, and the expenditure 1,611,000 guilders. For 1890 the revenue was estimated at 1,340,813 and expenditure at 1,647,153 guilders, as compared with 1,426,913 guilders of revenue and 1,628,541 guilders of expenditure in 1889. The imports in 1889 were valued at 4,893,355 guilders, and the exports at 3,521,867 guilders. In 1888 the production of sugar was 6,206,553 kilogrammes; of cacao, 1,543,019 kilogrammes; of coffee, 5,560 kilogrammes; of bananas, 516,799 bunches. In 1888 there were granted 441 concessions for gold mining. The export of gold was 1,410,795 guilders. Gov. de Savornin Lohman, in his endeavor to benefit the black population, became involved in a conflict with the Provincial States, as the legislative council is called, which frustrated his purposes. He imported food on Government account, on the ground that there was scarcity, and sold it to the poorer people at less than market rates, thus offending the merchants. In the arrangements for celebrating the anniversary of representative government the Governor was ignored. The Legislature was opened without him. The negroes, incensed at the treatment of their patron, interrupted the festivities, and afterward looted the merchants' stores. The Governor released some that were arrested, and the mob became more inflamed and for two days held possession of Paramaribo. The civic guard, militia, regular force, and marines put an end to the riot, killing many negroes. The Governor's action during the disturbance led to a dispute with the Attorney-General. In consequence of these troubles he was dismissed in May, 1891, and M. van Asche van Wyck was appointed in his place. The whites say that the prosperity of the colony depends on their retaining the upper hand, and that it is still suffering from the consequences of a too precipitous emancipation of the slaves. The soil is so rich that the negroes can live without regular work, and for that reason the sugar and cacao plantations can only be cultivated with the labor of Chinese and Indian coolies, especially the latter. Latterly the Indian Government has refused to allow further importations of Madras coolies until the Surinam authorities can offer guarantees that they will be humanely treated and regularly inspected.

The question of the delimitation of the auriferous lands on the border of Dutch Guiana and the French colony of Surinam was settled in May, 1891, by the arbitration of the Emperor of Russia. He declined to act as arbitrator until the French Government withdrew its restrictions regarding the scope of the award. Nevertheless, the French people expected that the decision would be in their favor, and were much disappointed when he confirmed all the claims advanced by the Netherlands. The natural frontier formed by the river Lawa is fixed as the boundary between the two colonies.

NEVADA, a Pacific Coast State, admitted to the Union Oct. 31, 1864; area, 110,700 square miles; population, according to the census of 1890, 45,761. Capital, Carson City.

Government.—The following were the State officers during the year: Governor, Ross K. Colcord; Lieutenant-Governor, J. Poujade; Secretary of State, Olin H. Grey; Comptroller, R. L.

Horton; Treasurer, John F. Egan; Attorney-General, J. D. Torreyson; Superintendent of Public Instruction, Orvis Ring; Surveyor-General, John E. Jones; Justices of the Supreme Court, R. R. Bigelow, M. A. Murphy, C. H. Belknap; Clerk, J. Josephs; Regents of the University, E. T. George, J. W. Haines. All these officers are Republicans.

Finances.—The balance in the treasury on Jan. 1, 1891, was \$366,825.28; the receipts and transfers during the year amounted to \$453,891.54; the total expenditures were \$503,414.05; the outstanding warrants at the end of the year, \$2,723.39; the net balance on Jan. 1, 1892, was \$314,579.38. Of this balance, the sum of \$140,748.49 was credited to the general fund, \$43,037.84 to the State school fund, \$36,157.43 to the general school fund, \$24,719.35 to the State interest and sinking fund, \$18,795.44 to the Territorial interest fund, \$23,094.83 to the State University fund, \$11,899.74 to the University fund (90,000-acre grant), \$7,274.60 to the insane interest and sinking fund, \$897.33 to the State library fund, \$3,601.07 to the contingent University fund, and \$4,353.26 to the interest account (90,000-acre grant). Of the disbursements, \$49,553.04 was for the expenses of the Legislature, \$99,825 for the support of schools, \$50,000 for purchase of bonds, \$23,000 for redemption of bonds, and \$25,730 for interest on bonds.

The State debt on Dec. 31, 1891, with accrued interest, amounted to \$222,913.39, exclusive of the \$380,000 irredeemable State bonds. The cash in the treasury applicable to the payment of the debt was \$185,158.60. On Jan. 11, 1892, \$24,000 of outstanding State bonds were redeemed. The sum of \$169,000 was in 4-per-cent. State bonds belonging to the State school fund, and \$38,000 in 4-per-cent. bonds belonging to the University fund.

The Comptroller's report shows that the net receipts into the treasury from the organization of the State government to the end of 1891, twenty-seven years, were \$11,281,082.03, of which \$1,610,750.28 was received from the sale of State lands, \$1,728,047.14 from the proceeds of mines, and \$5,753,458.01 from the State tax on real and personal property. The expenses of the Legislature have decreased from \$79,944 in 1865 to \$49,553.04 in 1891, and of the executive department from \$52,511.15 to \$39,729.37.

The taxable property in the State was valued at \$24,663,384.57 in 1890, and at \$29,807,542.98 in 1891, an increase of \$5,144,158.41. The total tax, State and county, in 1891 was \$691,472.70, that of the State amounting to \$223,539.81. The total value of the property of the Central Pacific in the State in 1891 was estimated at \$8,008,090.94, that of the Virginia and Truckee Railroad Company was \$982,596.25, and of all railroad property \$10,680,997.19.

The total debt of counties on Dec. 31, 1891, was \$446,741.60, of which \$325,222 is bonded. Five of the fourteen counties have no debt.

Education.—The schools, which cost the State \$3,049.52 in 1865, were maintained in 1891 at an expense of \$76,212.50. The total expense between these years, inclusive, was \$790,052.20. The present market value of securities in the school funds, consisting of State and United States bonds, is \$1,169,500. The total number

of children of school age in 1890 was 10,022; the number of school-houses, 254; of teachers, 251; average number of months of school, 7; average monthly wages of male teachers, of whom there were 41, \$97.68; of female teachers, \$63.86.

The State University, at Reno, had 145 students in 1890. It forms a part of the public-school system, and is free to residents of Nevada. It is coeducational, and has five departments—namely, schools of mines, agriculture, and liberal arts, a normal school, and a business department. As an agricultural and mechanical college, it will hereafter receive aid from the United States Government, beginning with \$15,000 annual appropriation, and increasing \$1,000 a year until it reaches \$25,000. The State made an appropriation of \$8,000 for the construction of a laboratory and its maintenance for 1891 and 1892, and \$20,000 for the support of the university for two years. The amount held in trust by the State for the institution in bonds and cash was \$124,254.57.

State Prison.—The support of the State Prison during the year required \$33,508.01; the receipts from the prison were \$2,678.25. The number of prisoners during the years 1889 and 1890 averaged 95.

Charities.—An appropriation of \$26,000 was made for the support of the State Orphans' Home for the years 1891 and 1892, one of \$85,000 for the State indigent insane, and \$1,000 for the deaf, dumb, and blind; the total amount expended on State charitable institutions in 1891 was \$54,807.15.

Agricultural Experiment Station.—This is at Reno, and receives \$15,000 annually from the Government, under the provisions of the Hatch act. Experiments have proved the soil well suited for potatoes, a large number out of the 100 varieties tried having been successfully cultivated. Thirty varieties of grasses were tried, and many were found suitable to a dry climate, but it was shown that alfalfa could not be surpassed. More experiments are to be made.

Mining.—The product of the mines for the year ending Sept. 30, 1891, was 375,708 tons; the gross yield or value, \$5,948,563.19; the net yield, \$762,895.71. The yield of the Comstock lode for 1890 was about \$4,228,903.31 (the last quarter estimated from the other three). The number of men employed on that lode is from 1,500 to 2,000. Some of the placer mines have been put in condition to be worked more successfully by the building of flumes for conveying water to them. A company has been formed to reclaim from the sands in the bed of Carson river, by means of dredges and electric amalgamators, the gold and silver they are supposed to contain. These sands have been swept into the river from the mills reducing the ore of the Comstock lode. It is believed that the value of these deposits may reach \$100,000,000.

The gross yield of salt, borax, and soda for three fourths of 1890 was \$72,047.85, and the net yield \$18,418.02. It is said that extensive beds of niter have been found on the south of the Central Pacific Railroad, near the sink of Humboldt river.

Manufacturing.—The total number of manufacturing establishments in 1890 was 166, of which 118 were quartz mills, 13 smelting fur-

naces, 11 flour and grist mills, 11 saw mills, and 10 borax works.

State Lands.—The report of the Surveyor-General for the years 1889-'90 was published in 1891. It gives, among many important statistics, a statement of the results of a survey ordered by the Government of California to correct and establish that portion of the eastern boundary line of that State southeastward from Lake Tahoe. Two surveyors from Nevada were appointed to act with those from California. The monument on the State-line point at the northern shore of the lake, marking the boundary, was found to be 1,609 feet too far west; the point of intersection of the one hundred and twentieth meridian of longitude with the thirty-ninth parallel of latitude was found to be 4,073.3 feet too far west as formerly established; and the boundary monument in latitude 358 on the Colorado river was found to be, according to this survey, 1,264 feet due east of the true State line.

Governor's Message.—In his inaugural message to the Legislature, Gov. Colcord called attention to the inequalities of assessment and taxation. He said that, while the amount now required for State purposes is 90 cents on each \$100, if all the property could be assessed at 70 per cent. of its actual cash value, the requirements would not exceed 55 cents on the \$100. For this purpose he recommended a State board of equalization. Other recommendations made by the Governor were the adoption of the Australian ballot system, the investment of the school funds on hand in cash in bonds of other States, a moderate appropriation for an exhibit at the World's Fair, a provision for an annual encampment of the State troops, and an appropriation for the Fish Commission.

NEW BRUNSWICK. The Hon. Sir S. L. Tilley, C. B., K. C. M. G., continues in the Lieutenant-Governorship of the province, with a Cabinet consisting of Hon. N. G. Blair, Attorney-General and Premier; Hon. James Mitchell, Provincial Secretary and Receiver-General; Hon. P. G. Ryan, Chief Commissioner of Public Works; Hon. L. J. Tweedie, Surveyor-General; Hon. William Pugsley, Solicitor-General; Hon. Archibald Harrison and Hon. C. H. La Billois, without office. By the appointment of seven members the Legislative Council has been increased to its full strength of eighteen. In the House of Assembly but one change has taken place, a new member elected to fill the vacancy through resignation in the representation for the county of Kent.

Legislation.—The important measures passed at the session of the Legislature in March and April were:

An act to further facilitate the construction of public works. This act provides for the rebuilding of bridges, where required, with stone piers and iron or steel superstructure, and authorizes a loan not to exceed \$250,000 at 4 per cent. interest, to be met by a sinking fund annually taken from the appropriations for public works. It repeals the act passed in 1890 for a similar purpose, under which no operations had taken place.

An act respecting the office of Queen's printer, which changes the mode of Government printing, the Queen's printer becoming an officer of the Provincial Secretary's department, and provides that all money received for the public printing and advertising shall

be paid to the Receiver-General as part of the public revenues, and all expenses be paid from the provincial treasury. The act goes into operation by proclamation of the Lieutenant-Governor.

An act relating to the Legislative Council, which abolishes the Legislative Council and vests the legislative powers in the Lieutenant-Governor and Legislative Assembly, instead of "the Lieutenant-Governor, Legislative Council, and Assembly." The lower branch of the Legislature has repeatedly passed acts to abolish the upper branch, but these have always been thrown out by the Legislative Council. The present bill, as introduced by the Government and passed by the Assembly, provided for immediate abolition. Amendments delaying the operation of the measure were moved in the Legislative Council, and after much spirited debate the bill as introduced was carried. A reconsideration was moved in the Council on the following day, with the result that the act will not come into operation until after the first session of the Legislature in 1894, or when the present House of Assembly ceases to exist by dissolution.

An act in aid of the construction of railways, authorizing the Government to pay a subsidy of \$2,500 a mile to any corporation undertaking to construct the lines of railway that are named in the act, and providing for a loan to meet the subsidies.

An act to amend the "Common Schools Act" and the act relating to the University of New Brunswick, by which the Chief Superintendent of Education becomes the president of the senate of the university, and makes other changes in the management of the institution, bringing it into closer relations with the educational system of the province.

An act respecting railways, being a general act for the incorporation of companies. It deals with all matters incident to the building and management of railways in the province.

An act relating to mines and minerals, authorizing prospecting licenses for gold and silver up to 100 areas (each 150 feet by 250 feet), issued at 50 cents an area up to 10 areas, and 25 cents afterward per area, good for one year. These licenses can be renewed for second year by payment of half this amount. Leases for twenty years to work and mine, on payment of \$2 an area of 150 feet by 250 feet. Renewable annually at 50 cents an area in advance.

Royalty on gold and silver, 2½ per cent. Licenses to search for minerals other than gold and silver, good for one year, \$20 for 5 square miles. Lands applied for must not be more than 2½ miles long, and the tract so selected may be surveyed on the Surveyor-General's order at expense of licensee if exact bounds can not be established on maps in Crown Land Office. Renewals for second year may be made by consent of Surveyor-General, on payment of \$20. Second rights to search can be given over same ground, subject to party holding first rights, on payment of \$20. Leases are given on payment of \$50 for 1 square mile, good for two years, and extended to three years by further payment of \$25.

The following are the royalties: Coal, 10 cents a ton of 2,240 pounds; copper, 4 cents on every 1 per cent. in a ton of 2,352 pounds; lead, 2 cents on every 1 per cent. in a ton of 2,240 pounds; iron, 5 cents a ton of 2,240 pounds; tin and precious stones, 5 per cent. of value.

Agriculture.—An exhibition, principally of manufactures, was held in the city of St. John, in September and October, under the management of a local company, and an agricultural exhibition in October, under the management of the District Agricultural Society, was held at Fredericton. The products of the farm throughout the province, both as respects quantity and quality, are in advance of other years. An increased interest in the improvement of agricultural live stock has been promoted through the importation of a large number of pure-bred

cattle and sheep by the Government of the province, thus continuing a policy that was adopted a few years ago in the importation of horses. The cattle and sheep were sold at reduced prices to the agricultural societies, and by them distributed through the province.

Census.—The third census since the confederation of the provinces was taken during the summer. The province has gained only 61 during the decade, the population in 1881 being 321,233, and in 1891 being 321,294. Taken by counties, the gains are shown to have been where the population is largely French.

COUNTIES.	1881.	1891.
Albert	12,329	10,971
Carleton	23,465	22,523
Charlotte	26,087	23,751
Gloucester	21,614	* 24,991
Kent	22,618	* 22,889
Kings	25,617	23,094
Northumberland	25,109	25,715
Queens	14,017	12,152
Kestigouche	7,058	8,811
St. John	62,966	49,574
Sunbury	6,651	6,768
Victoria	15,686	* 18,219
Westmoreland	37,719	* 41,484
York	30,397	30,079
Fredericton city	6,218	6,502
St. John city	41,363	39,179
Moncton	5,432	8,765

* Largely French.

Trade.—The value of exports of the province for 1891 was \$7,182,748, and of the imports \$5,658,385. Of exports, \$3,239,190 went to the British Empire, \$3,646,353 to the United States, and \$297,205 to all other countries. Of imports, \$2,366,882 came from the British Empire, \$2,994,088 from the United States, and \$497,415 from all other countries.

Finances.—The balance of debit in the current revenue account, Dec. 31, 1890, was \$42,587.57. The total payments were \$863,013.19, and the total receipts \$815,262.20, making a balance of \$90,338.56 against the province on current revenue account on Dec. 31, 1891. The gross debt of the province at the same date was \$2,484,559.73; assets, \$590,468.26; net debt, \$1,894,091.47.

NEWFOUNDLAND. Legislative Session.—During the legislative session of 1891 several important acts were passed, which are here summarized:

A comprehensive act, dealing with the management of the whole postal service of the colony, and assimilating it to that of Great Britain and Canada, defines the duties and responsibilities of the Postmaster-General and the officials. It also regulates local and foreign postage, parcels-post, registration of letters, money orders, post-office savings, banks, etc.

The act to provide for Newfoundland Lloyd's Classification and Registry of Shipping and for the encouragement and improvement of ship-building authorizes the payment of a bounty on vessels built in the colony, on the certificate of Lloyd's surveyor that they have been built in accordance with the specifications laid down in section 2. A fee of ten cents per ton is to be paid for survey. Provision is also made for the annual survey of all steam or sailing vessels engaged in the deep-sea fisheries (including Labrador) and the foreign trade of the colony, the fee to the surveyor to be five cents per ton. Bounty for vessels built to be according to class—seven years' class, four dollars a ton; ten years' class, five dollars a ton; thirteen years' class, six dollars a ton. Three

surveys to be held on each vessel: 1. When in full frame; 2. When planking (except deck) is completed; 3. When vessel is completed. Certificate to be given by Lloyd's surveyor on final survey.

An act amending a previous "Act for the construction and equipment of a line of railway toward Hall's Bay, etc." authorizes the Government to purchase the Newfoundland Railway, and to raise by loan such sum of money as may be necessary therefor. It further provides the form of bond to be given under the provisions of the amended act.

An act amending a previous "Act for the registration of births, marriages, and deaths," appoints as registering officers all clergymen and other persons who are legally entitled to baptize, celebrate marriages, or perform funeral services in the colony and having charge of a mission or congregation. It also provides that no burial shall take place without a certificate.

An act to provide for the improvement of education authorizes the Governor in Council to appoint a board of nine commissioners, of whom three shall be members of the Church of Rome, three shall be members of the Church of England, two shall be members of the Methodist Church, and one Presbyterian. It also defines their powers and duties in connection with the improvement of the educational system of the colony. Since this act was passed by the Legislature the Church of England Synod and the Methodist Conference objected to its provisions, and the commissioners have not yet been nominated by the Governor in Council. The Legislature, last session, voted the sum of \$20,000, to be paid annually for increasing the salaries of teachers of board schools throughout the colony, which was distributed for the first time in 1891.

The act to amend "the Fisheries Commission act" provides for the promulgation of the rules and regulations of the commission by resolution of both branches of the Legislature and publication in the "Royal Gazette," and declares that nothing in the rules made shall affect the treaty rights on the coast of this colony of any state or power in amity with Her Majesty.

"The Newfoundland French Treaties act of 1891" makes provision for carrying into effect engagements with France respecting fisheries in Newfoundland. After reciting articles from the various treaties affecting the fisheries, from that of Utrecht (1713) to that of Paris (1815), the act declares that all orders given by Her Majesty to the Governor of Newfoundland, or any officer or officers on that station, which she or they deem necessary to fulfill the purposes of said treaties and agreements, or "any acts done by said Governor or officer or officers in pursuance of such orders and instructions as aforesaid, shall be lawful, and no action, suit, or other proceeding shall be brought or maintained in respect of the same." The act also recites the terms of the agreement or *modus vivendi* of 1890 between Her Britannic Majesty and the Government of the republic of France, in virtue of which the differences which had arisen in connection with the catching and canning of lobsters on the treaty shore of Newfoundland were to be submitted to a commission of arbitration, and declares that all orders or instructions issued by Her Majesty to the Governor or officer or officers "which she or they deem necessary for enforcing said *modus vivendi* during the fishing season of 1891, or any continuation thereof, pending the arbitration aforesaid, and all acts done by said Governor or officers in pursuance of such orders shall be lawful, and no action, suit, or other proceeding shall be maintained in respect to the same"; and that "persons refusing to obey the lawful orders from Her Majesty's officers shall be liable to a fine of \$200."

The act to amend the "Crown Lands act of 1884" provides that when any person desires to obtain a lease of mineral land he shall mark the land by four boundary posts or cairns, the extent of inclosed land not to exceed one square mile; and that as soon as

possible he shall apply to the Surveyor-General for a license and deposit a fee of \$20, the first notice filed to give priority of claim. The first license shall be for a year; a fee of \$30 shall entitle to extension for another year; and a further sum of \$50 to an extension for another year. At any time a party may apply for a lease (under the usual conditions), depositing with his application \$25. Owners of mills are not to permit sawdust or refuse to be introduced into bays or creeks, under a penalty of \$100 for each offence.

The act to amend the "Crown Lands act of 1890" renders less onerous the conditions under which the timber land may be held for the establishment of wood-pulp industry. It provides that the license fee per mile of land, payable each twenty-five years, shall be \$20 instead of \$30; and that the expenditure on buildings and machinery shall be \$1,000 per mile of land, instead of \$3,000; also removes all restrictions on removal of machinery or buildings, and repeals provision as to planting of trees to replace those cut down.

The act to provide for the holding of an industrial exhibition in St. John's in 1892 directs the appointment of a commission to superintend operations, and appropriates \$2,000 for the exhibition.

The act amending "the Temperance act of 1889" provides for prohibition or the repeal of prohibition in any district where a majority of the voters poll in favor of such prohibition or repeal of prohibition.

The act to amend "the Act relating to the preservation of game and deer" provides that the close time for caribou shall end on Sept. 15 instead of Oct. 1; that persons who have ptarmigan in their possession on Jan. 12 may offer them for sale till Jan. 22; and also extends the close time for trout, etc., from Dec. 1 to Feb. 1 succeeding.

The act amending "the St. John's Municipal act" makes the term of the Council's office three years instead of two, and makes every male British subject residing in the town and paying any municipal assessment a voter. It also gives plenary powers to Council regarding all matters affecting the health and safety of the inhabitants, the establishment of markets, the care and construction of streets, and the management of the fire department. It also gives Council authority to impose a "business tax" on distillers, brokers, railway and steamboat companies, proprietors of billiard rooms, peddlers, carters, insurance companies, banks, gas companies, telegraph, telephone, and electric-light companies doing business in St. John's.

The Fisheries.—The most valuable and important of the fisheries is the cod fishery, which is carried on upon the banks, the shores of the island, and the Atlantic coast of Labrador, which is under the jurisdiction of Newfoundland. In 1890 the export of codfish (inclusive of Labrador) was 1,040,916 quintals, the value being \$3,986,898. Of this quantity 266,622 quintals were exported from Labrador, the value being \$693,217. In addition 142,000 pounds of boneless codfish were exported—value, \$6,390. Of cod oil 3,195 tons were exported in 1890, and of refined cod-liver oil 5,440 gallons. The total value of the exports of the cod fishery of 1890 was \$4,238,556. It is estimated that 150,000 quintals of codfish are consumed in the island.

The following figures show the number of seals taken in the years named: In 1887, 230,555; in 1888, 286,464; in 1889, 207,084; in 1890, 220,321; in 1891, 343,503. The number of men engaged in the seal fishery in 1891 was 4,284; of steamers, 19, having a tonnage of 5,947 tons.

In 1890 the export of lobsters was 69,344 cases; value, \$520,078.

The quantity of herring exported in 1890 was 107,063 barrels; value, \$278,847.

The value of the export of salmon in the same year was \$113,370.

Total value of fisheries in 1890, \$5,649,766.

The Fisheries Commission are conducting their operations with a twofold object:

(1) To restore exhausted waters to their former abundance by the artificial propagation of marine and other food fishes; (2) to protect the various fisheries by a proper regulation for the seasons for fishing and of the various appliances for catching fish.

At Dildo cod and lobster hatchery, one of the largest in the world, in 1891, 40,000,000 codfish were hatched and planted in Trinity Bay, and also about 15,000,000 young lobsters.

In addition, the propagation of lobsters was carried on by means of floating incubators, the invention of Mr. Adolph Nielsen, Superintendent of Fisheries, in nearly all the great bays. A remarkable success has been reached. The incubators are worked by men who have been specially instructed, and at a very small cost. The ova are stripped from the fibrils under the tails of the female lobsters which are brought to the factories before they are thrown into the boilers, and the germs of life are thus saved from destruction. The incubators are placed near the lobster factories in pure sea water which has a certain amount of motion. They are hatched in a few days and liberated, and then a fresh supply of ova is obtained. In 1891 432 of these floating incubators were used at 18 different stations. The astounding number of 550,000,000 were hatched in the season. It is anticipated that this method of artificial propagation, together with a stringent enforcement of a close season and the prohibition of the capture of immature lobsters, will have the effect of arresting the threatened destruction of the lobster fishery, and even of extending it by planting lobsters in waters where they were previously unknown. In no other country has such success been reached in lobster hatching. Mr. Nielsen has invented a lobster trap which will permit the escape of young lobsters that have not reached the reproductive age, and are too small for use, while larger lobsters are retained.

The herring fishery receives special attention, and under Mr. Nielsen's instructions for curing and packing this fishery is developing rapidly. During his researches last summer Mr. Nielsen discovered a bank, over one hundred miles long, off the west coast of the island where herring of a superior quality resort in large numbers, and where a summer drift-net herring fishery might be established. In summer the herring are fat and in the best condition for being taken.

Finances.—The following table shows the imports, exports, and revenue in the years named:

YEAR.	Imports.	Exports.	Revenue.
1887.....	\$5,397,408	\$5,176,730	\$1,272,600
1888.....	7,420,400	6,882,013	1,370,029
1889.....	6,697,065	6,122,385	1,362,293
1890.....	6,368,855	6,099,686	1,454,596

The public debt in 1890 was \$4,138,627, which averages about \$19.69 per head of the entire population. The interest on the public debt in 1890 was \$202,914.

Industries.—The last census showed that there were in the colony 55 saw mills, 4 tanneries, 5 breweries and distilleries, 6 iron foundries, 6 bakeries, 7 furniture factories, 95 other factories; value of factories, \$954,536; value of goods produced, \$1,554,536; number of hands employed, 2,450.

Minerals.—As a mining country Newfoundland occupies a high place. It stands sixth among the copper-producing countries of the world. From 1864, when the first copper mine was opened, till 1879 copper and nickel ore to the value of \$4,629,889 had been exported. Since that date copper mining has gone on steadily. At present the chief copper mines are those of Tilt Cove and Little Bay, on the shores of Notre Dame Bay. From these two mines the export in 1890 was as follows:

	Tons.	Value.
Copper ingots.....	609	\$175,392
Copper green ore.....	400	8,400
Copper regulus.....	1,245	48,090
Total.....	2,244	\$226,792

An extensive deposit of iron pyrites, averaging 52 per cent. of sulphur, was discovered a few years ago at Pilley's island in the same bay. In 1890 the export of pyrites from this mine was 1,670 tons; value, \$72,315. In 1891 the export was more than doubled, and in 1892 will probably reach 70,000 tons. An antimony mine has been recently opened in the same region, which promises well, and news of a large deposit of asbestos on the west coast has been received lately. Silver and lead mines are worked in Placentia Bay, but as yet on a small scale. Both these minerals have also been found in workable quantities at Port-a-Port, St. George's Bay. A very valuable gypsum mine has recently been opened at Romaine's brook, St. George's Bay, from which the export is large, but returns are not yet available. The coal area of St. George's Bay as yet unworked is 25 miles wide by 10 in length.

Shipping.—The registered shipping on Dec. 31, 1891, was 2,207 vessels; net tonnage, 98,619 tons. In 1890 48 new vessels were built; tonnage, 1,896 tons; bounty paid, \$7,566.

Railways.—The construction of the Hall's Bay Railway made excellent progress during 1891. At the close of the year about 70 miles were graded and the rails laid over a considerable portion of this line. From 600 to 800 men were employed on it.

Political.—The political events of the "Ancient Colony" during 1891 were peculiarly important. They have been developed chiefly in connection with the vexed question of the "French shore." British subjects had established lobster factories at various points along that portion of the coast on which the French have certain fishing privileges secured to them by treaties. The French objected to such operations as a violation of the treaties, and claimed an exclusive right to take lobsters, or, at least, an equal right with British subjects. The British Government held that the right of the French was limited "to taking and drying fish," but that the treaties did not include the catching of shell fish and their manufacture and packing on shore.

After lengthened negotiations, both Governments agreed to refer the points in dispute to a commission of arbitration. Pending the results of such arbitration, a *modus vivendi* was agreed on, to the terms of which the Government and people of Newfoundland strongly objected, and two deputations were sent to England to lay their grievances before the British public and present a protest to the Government. No immediate results followed, and meantime the provisions of the obnoxious *modus vivendi* were enforced by Sir Baldwin Walker, who commanded the war ships stationed on the coast. It was discovered that there was no legal authority for the enforcement of this *modus vivendi*, the old statute which gave power to naval officers to put the treaties in force having been inadvertently repealed. When, then, Sir Baldwin Walker closed certain British lobster factories, Mr. James Baird, a St. John's merchant, whose property had been interfered with, took an action against him and obtained a judgment in the Supreme Court awarding him \$5,000 damages. Then the British Government discovered that to enforce the *modus vivendi* a new act of Parliament must be passed. A bill for this purpose was hastily introduced into the House of Lords, reviving an old coercive act which gave naval officers almost unlimited control on the French shore. As soon as the terms of this coercive act were known in the colony the Legislature, then in session, passed resolutions condemning it in the strongest terms, appointing delegates to proceed to London to arrest the progress of this bill, and claiming that they should be heard at the bar of the House of Lords. Their claim was allowed. One of the most brilliant and distinguished audiences that ever assembled within the walls of the Upper House listened to the representatives of the "Ancient Colony" as they pleaded for their rights and privileges, detailed the wrongs and grievances from which they long suffered, and protested against the new coercive measure, which they regarded as a violation of the Constitution of the colony. The scene was historic, and the impression made was decisive. The final result was that the British Government withdrew the obnoxious measure, on condition that the Legislature of the colony passed an act which would legalize the provisions of the *modus vivendi* for a limited period. This was done. The nature of the act has been defined in the early part of the present article. No progress, however, has yet been made in the arbitration.

Then another political agitation arose in connection with an attempt to negotiate a reciprocity trade arrangement between the United States and Newfoundland. Mr. Bond, Colonial Secretary, was authorized by the British Government to proceed to Washington, and, in conjunction with the British ambassador, to open communications for this purpose with the Government of the United States. A draft treaty was drawn up; but as soon as the terms were known the Government of Canada presented a vigorous protest, alleging that the treaty, if ratified, would affect the fishing interests of Canada most injuriously, and greatly embarrass them in carrying out fishery arrangements with the United States. The British Government recog-

nized the validity of the protest, and declined to ratify the Bond-Blaine reciprocity treaty. This treaty was strongly objected to by a large party in Newfoundland, on the ground that it made large and valuable concessions to the United States, but failed to secure corresponding concessions to the colony, so that the advantages were nearly all on one side.

Soon afterward, in order to mark its disapproval of what they considered the unwarrantable interference of Canada, the Government of Newfoundland declined to grant licenses for obtaining bait to any Canadian fishing vessels, while such licenses were given free of charge to American fishing vessels. Canada had hitherto made an exception in favor of Newfoundland fish and admitted it free of duty, while all other fish had to pay duties; and lately, to mark their sense of the wrong done them by the refusal of bait, the Canadian Government withdrew this privilege, so that Newfoundland fish has to pay duty in Canadian ports. The Newfoundland Government at once responded by placing increased duties on several articles of Canadian produce, such as flour, pork, butter, tobacco, corn meal, and farm produce. Thus the close of 1891 found two British colonies engaged in a war of tariffs.

Exploration.—The year 1891 was marked by the discovery, or rather rediscovery, of the Grand Falls of Labrador, about the same time, by H. G. Bryant, of Philadelphia, and Prof. Kenaston, of Washington, and by a party of students from Bowdoin College.

NEW HAMPSHIRE, a New England State, one of the original thirteen, ratified the Constitution June 21, 1788; area, 9,305 square miles. The population, according to each decennial census, was 141,885 in 1790; 183,858 in 1800; 214,460 in 1810; 244,022 in 1820; 269,328 in 1830; 284,574 in 1840; 317,976 in 1850; 326,073 in 1860; 318,300 in 1870; 346,991 in 1880; and 376,530 in 1890. Capital, Concord.

Government.—The following were the State officers during the year: Governor, Hiram A. Tuttle, Republican; Secretary of State, Ezra S. Stearns; Treasurer, Solon A. Carter; Attorney-General, Daniel Barnard; Superintendent of Public Instruction, James W. Patterson; Insurance Commissioner, John C. Linehan; Railroad Commissioners, Henry M. Putney, Benjamin F. Prescott, and J. M. Mitchell, who resigned on April 11. The vacancy caused by the resignation of Commissioner Mitchell remained unfilled during the year, by reason of the persistent refusal of the Council to confirm the nomination of Thomas Cogswell, which was repeatedly made by the Governor. Chief Justice of the Supreme Court, Charles Doe; Associate Justices, Isaac W. Smith, William H. H. Allen, Lewis W. Clark, Isaac N. Blodgett, Alonzo P. Carpenter, and George A. Bingham, who resigned early in the year and was succeeded by William M. Chase.

Finances.—The following figures show the receipts and expenditures of the treasury for the year ending May 31 and the condition of the State debt: Cash on hand June 1, 1890, \$202,061.31; receipts during the year, \$1,799,807.85; disbursements during the year, \$1,690,050.08; cash on hand June 1, 1891, \$311,819.08; liabili-

ties June 1, 1890, \$2,691,010.45; assets June 1, 1890, \$209,566.11; net indebtedness June 1, 1890, \$2,481,453.34; liabilities June 1, 1891, \$2,579,376.99; assets June 1, 1891, \$319,335.75; net indebtedness June 1, 1891, \$2,260,040.64; reduction of debt during the year, \$221,412.70. The revenue for the year amounted to \$831,870.06, and the expenses to \$610,457.36, making the excess of revenue over expenses \$221,412.70, which corresponds with the reduction of the debt.

The revenue was derived from the following sources: From the State tax, \$500,000; from railroad tax, \$110,529.61; from insurance tax, \$13,332.58; from direct tax refunded by the United States, \$181,891.02; from interest on deposits, \$2,259.75; from miscellaneous sources, \$23,857.10; total, \$831,870.06. The expenses were divided into ordinary, \$294,575.97; extraordinary, \$118,462.76; and interest charges, \$157,418.63. There was collected and distributed to the towns during the year a tax on savings banks to the amount of \$642,312.45.

During the year State bonds to the amount of \$114,000 were paid, as well as a temporary State loan of \$150,000. The funded State debt on May 31 was as follows: Bond of 1873, due July 1, 1879, \$500; municipal war loans, due from Jan. 1, 1892, to January, 1905, \$2,206,100; bonds of 1879, due 1891 and 1892 (July 1, \$100,000 each year), \$200,000; total funded debt, \$2,406,600.

The valuation of railroad property for 1891, as fixed by the State Board of Equalization, was \$19,547,300, against \$17,867,908 for 1890. An annual tax of \$500,000 is paid to the State by the towns according to their valuation.

Legislative Session.—The regular biennial session of the Legislature began on Jan. 7 and ended on April 11. The difficulties that preceded its organization and the action of the clerk of the Lower House, by which the Republicans obtained a majority in that body, are discussed at length in the "Annual Cyclopaedia" for 1890, page 600. On the opening day of the session the returns of votes cast for Governor in the November election were opened in the presence of both Houses, and, as there appeared to be no choice by the people for that office, a ballot was taken which resulted in the election of Hiram A. Tuttle, Republican, by a vote of 185 to 150 for Charles H. Amsden, Democrat. The choice of a successor to United States Senator Henry W. Blair devolved upon this Legislature. At their respective caucuses the Republicans nominated Jacob H. Gallinger, and the Democrats Charles A. Sinclair, the former receiving 95 votes on the first ballot in the Republican caucus, Jan. 15, to 62 votes for Senator Blair, 25 for Person C. Cheney, and 11 scattering, and being nominated on the second ballot. On Jan. 20 the separate ballot for Senator taken in each House resulted as follows: Senate, Gallinger 14, Sinclair 9, Harry Bingham, Democrat, 1; House, Gallinger 191, Sinclair 183, Charles H. Burns, Republican, 1. In the joint convention of the following day Gallinger was declared elected. On the same day Ezra S. Stearns, Republican, was elected Secretary of State and Solon A. Carter, Republican, was re-elected State Treasurer.

The passage of a secret-ballot act was an important result of the session. Its provisions ap-

ply to all elections held for the choice of presidential electors, representatives to Congress, State and county officers, and to the election of all other officers chosen at biennial elections, or to any elections of national or State officers. Any city that chooses its municipal officers annually may adopt the provisions of the act for such elections, by a vote of its qualified voters, and any town may adopt the provisions of the act for its annual elections. After April 30, 1892, city, ward, and town caucuses of qualified voters representing a political party which at the last preceding biennial election polled at least 3 per cent. of the entire vote cast in the State for governor may in a city or ward nominate candidates for city or ward officers, and in town for town officers, whose names shall be placed upon the ballots to be furnished by the city clerk, town clerk, or Secretary of State. Such caucuses may choose delegates to State, district, or county conventions, and such conventions may nominate one candidate for each State, district, or county office whose name shall be placed upon the official ballots. Candidates may also be nominated by nomination papers, signed by qualified voters of the State, district, county, city, ward, or town in and for which the officer is to be elected to the number of at least 500 where the officer is to be elected by the voters of the entire State; to the number of 250 where the officer is to be elected by the voters of a congressional district; of 50 where the officer is to be elected by the voters of a councilor, or senatorial district, or of a county or city; and of 25 where the officer is to be elected by the voters of a town or ward of a city. All ballots used in biennial elections and in all other elections for national and State officers shall be prepared by the Secretary of State at State expense; and all ballots used in annual elections in cities and towns shall be prepared by the city or town clerk at municipal expense. Every ballot shall contain the names, residences, and party politics of all candidates whose nominations have been duly made, the names being arranged alphabetically, according to surnames, under the designation of the office. Blank spaces are to be left at the end of the list of candidates for each office for those who wish to write in names not printed on the ballot. The voter shall designate his choice by a cross in a square at the right of the name of each candidate. The ballots shall be of plain white paper, with 4 pages not more than 5 nor less than 4½ inches in width, and not less than 6 inches in length. The names of candidates shall be printed in black ink and in uniform type, and the ballots shall be folded in marked creases lengthwise. On the back and outside, when folded, shall be printed the words "official ballot for," followed by the designation of the polling place for which the ballots are prepared, the date of the election, and a *fac simile* of the signature of the officer who prepared the ballots, such *fac simile* being at no election a copy of that used at a former election, and being kept secret till the day of election. The selectmen in the different wards and towns shall prepare the polling places therein, and shall cause the same to be suitably provided with marking shelves or compartments, at which voters may conveniently mark their ballots.

The necessity of adopting some legislation to protect the people from endowment-order swindles was earnestly discussed at this session; and an act was passed, known as the Barber bill, which places these orders under the control of the insurance commissioner. Under the provisions of this law the commissioner early in the year refused licenses to a large number of endowment orders, practically making it impossible for such orders to do business in the State.

The levy of an annual State tax of \$500,000 was authorized for each of the years 1892 and 1893. In order to redeem such portions of the war-loan bonds at their maturity as the revenue of the State would not provide for, the Treasurer was authorized to issue and sell new State bonds not exceeding \$800,000 in amount, at a rate of interest not exceeding 4 per cent.

The sum of \$175,000 was appropriated for the purchase of land and the construction of a building for the State Library, such sum to be raised by the sale of State bonds to the amount of \$175,000, payable in twenty years, and bearing not over 4 per cent. interest.

For the purpose of securing an exhibit of the resources of the State at the World's Columbian Exposition, the sum of \$25,000 was appropriated to be expended under the direction of a State board of managers.

The State was redistricted for Senators and for members of the Governor's Council.

Other acts of the session were as follow :

Assenting to the act of Congress approved Aug. 30, 1890, appropriating money in aid of colleges of agriculture and the mechanic arts in the several States.

Providing for the election by the alumni of Dartmouth College, of five additional trustees.

Accepting the provisions of the will of Benjamin Thompson, of Durham, which contemplate the establishment of an agricultural college in that town under the control of the State.

Making the day of each biennial election in the State a legal holiday.

To prevent the killing of moose, caribou, and deer.

Making the first Monday of September, known as Labor Day, a legal holiday.

Establishing a new apportionment for the assessment of public taxes.

To prevent the sale of adulterated foods, drugs, and other articles.

Establishing a State board of cattle commissioners.

Establishing a State board of registration of dentistry.

Providing for the removal of the New Hampshire College of Agriculture and the Mechanic Arts from Hanover to the farm of the late Benjamin Thompson in Durham.

Providing that if any State shall by law deny any insurance company or citizen of this State any rights or privileges which are granted to insurance companies or citizens of that State, then this State shall in like manner deny to insurance companies and citizens of that State all such rights and privileges.

Establishing a State board of library commissioners, which shall promote the establishment and efficiency of free public libraries.

Accepting the refund by Congress of the direct tax of 1861.

Establishing the city of Rochester.

Charities.—The State Insane Asylum at Concord, which has accommodations for 350 patients, was filled throughout the year. The receipts of the institution for the year were \$108,478, and the expenditures \$108,344. There is a perma-

nent fund for the use of the asylum amounting to \$275,932.

Prisons.—At the Concord State Prison there were 107 convicts on Dec. 30, 1890. During the year following 61 convicts were received and 42 discharged, leaving 126 remaining on Nov. 30, 1891, of whom 122 were men and 4 women. At the State Industrial School there were about 120 inmates during the year.

Savings Banks.—The aggregate of deposits in the 73 savings banks of the State on Sept. 30 was \$69,531,024.62, an increase of \$3,804,005.58 in one year. Their guarantee fund on that date amounted to \$4,139,476.62, their surplus to \$2,396,367.98, and their miscellaneous debts to \$24,650.75, making their total liabilities \$76,091,519.97. The total number of depositors was 166,264, an increase of 6,482 in one year, and the average for each depositor was \$418, against \$411 in 1890. There are certain trust companies of the State which are authorized to receive savings deposits, and the amount held by such on Sept. 30 was \$1,527,075.83.

Insurance.—During the past two years the foreign insurance companies, which left the State a few years ago after the passage of the valued-policy law, have been gradually resuming business. The following table shows the business done by all companies in the State during 1890 and 1891.

ITEMS.	1890.	1891.
NEW HAMPSHIRE STOCK COMPANIES.		
Risks written	\$45,906,693 87	\$46,229,761 55
Premiums collected	551,129 17	518,350 06
Losses paid	285,562 59	217,385 66
NEW HAMPSHIRE CASH MUTUALS.		
Risks written	\$7,919,902 23	\$5,689,533 22
Premiums collected	120,791 26	90,402 56
Losses paid	83,484 52	42,023 98
FOREIGN STOCK COMPANIES.		
Risks written	\$19,885,300 23	\$22,382,386 29
Premiums collected	260,256 90	300,588 51
Losses paid	42,785 86	89,880 21
FOREIGN MUTUALS.		
Risks written	\$2,193,201 00	\$2,265,474 00
Premiums collected	29,143 51	28,171 24
Losses paid	5,058 48	8,120 35

NEW JERSEY, a Middle Atlantic State, one of the original thirteen, ratified the Constitution Dec. 18, 1787; area, 7,815 square miles. The population, according to each decennial census, was 184,139 in 1790; 211,149 in 1800; 245,562 in 1810; 277,426 in 1820; 320,823 in 1830; 373,306 in 1840; 489,555 in 1850; 672,035 in 1860; 906,096 in 1870; 1,131,116 in 1880; and 1,444,933 in 1890. Capital, Trenton.

Government.—The following were the State officers during the year: Governor, Leon Abbett, Democrat; Secretary of State, Henry C. Kelsey; Treasurer, John J. Toffey, succeeded by George R. Gray; Comptroller, Edward J. Anderson, succeeded by William C. Heppenheimer; Attorney-General, John P. Stockton; Superintendent of Public Instruction, Edwin O. Chapman; Commissioner of Banking and Insurance (an office created by the Legislature this year, the first incumbent being appointed in March), George B. M. Harvey, who resigned early in June and was succeeded by George S. Duryee; Chief Justice of

the Supreme Court, Mercer Beasley; Associate Justices, Manning M. Knapp, Alfred Reed, Edward W. Seudder, Bennet Van Syckel, David A. Depue, Jonathan Dixon, William J. Magie, and Charles G. Garrison; Chancellor, Alexander T. McGill, Jr.; Vice-Chancellors, Abraham V. Van Fleet, John T. Bird, Henry C. Pitney, and Robert S. Green.

Finances.—The balance in the State revenue fund on Oct. 31, 1890, was \$433,760.87; the receipts for the year ensuing were \$2,130,423.96; the disbursements were \$2,162,015.87; and there remained a balance of \$402,168.96 on Oct. 31, 1891. The receipts included the following items: Tax on railroad corporations, \$1,046,035.10; tax on miscellaneous corporations, \$405,058.98; fees paid for certificates of new corporations, \$91,479.28; tax on foreign insurance companies, \$6,616.96; State Prison receipts, \$79,869.31; official fees, \$23,904.67; judicial fees, \$24,952.64; riparian lands, \$49,560.23; interest and dividends, \$18,870; direct war tax refunded, \$382,614.83. The disbursements may be classified as follow: Ordinary State expenses, \$1,272,612.34; special appropriations paid, \$136,751.53; expenses incurred in the previous year, \$36,393.30; temporary loans paid with interest, \$410,230.16; paid on war debt and loan sinking fund, \$131,357; miscellaneous expenses, \$174,671.54; total, \$2,162,015.87.

In the State school fund, which is distinct from the State revenue fund, the balance on Oct. 31, 1890, was \$662,025.64; the receipts for the year ensuing were \$256,184.10; the disbursements were \$437,374.96; and there remained a balance on Oct. 31, 1891, of \$480,834.78. At the latter date the permanent investments held by this fund amounted to \$3,315,567.60, to which should be added the cash balance of \$480,834.78, making the total value of the fund \$3,796,402.38. The income only is used for school purposes.

The sinking-fund receipts for the year, including the annual State appropriation of \$90,000 and \$41,357 loaned to this fund by the revenue fund, amounted to \$194,029.37. The disbursements, including \$162,331 for payment of principal and interest on the State debt, were \$164,704.55. On Oct. 31 the total value of this fund was \$538,636.93, a decrease of \$14,470.13 during the fiscal year. The permanent State debt now amounts to \$1,006,300. The Governor says in his last annual message:

During the past fiscal year the entire floating debt of \$400,000, which existed at the commencement of my administration, was fully paid off and discharged, and over \$10,000 paid for interest thereon. Over \$64,000 has been expended for obtaining title to the camp ground at Sea Girt, which was taken under condemnation proceedings instituted under acts of 1888 and 1889. Payments have been made for the Home for Disabled Soldiers, the State Lunatic Asylum, the Agricultural Experiment Station, and other purposes amounting to over \$75,000. Over \$92,000 was spent to enlarge and rebuild the Assembly Chamber; \$90,000 of the public debt has been paid; over \$41,000 has been loaned to the sinking fund; and alterations and additions have been made to the State House, upon which nearly \$26,000 have been expended.

The sum of \$382,614.83 was collected from the United States, without the payment of any commission or charge therefor.

Valuations.—The total assessed valuation of property in the State subject to taxation is as

follow: Value of railroad property in 1891, \$210,044,945; other classes of property in 1891, as they appear by the return of ratables in the Comptroller's office \$701,320,029; total value, \$911,364,974. Upon the railroad valuation a tax of \$1,050,224 for State purposes was assessed in 1891. The same tax on this property for 1890 was \$1,010,305, the valuation for that year being \$202,106,027.

Legislative Session.—The one hundred and fifteenth Legislature met at Trenton on Jan. 13, and adjourned on March 20. One of its duties was the selection of a State Comptroller and a State Treasurer for the term beginning in 1891. The successful candidate for the former office was William C. Heppenheimer, and for the latter George R. Gray—both Democrats. The secret-ballot law of 1890 was amended in many of its details. It does not now apply to municipalities having fewer than 4,000 inhabitants; but in a modified form it is extended to town meetings and township elections. At such meetings or elections the booths and official envelopes for secret voting shall be provided by the town or township officials, but there shall be no official ballots.

The trustees of the State Institution for the Deaf and Dumb were legislated out of office, and the control of the school was placed in the hands of the State Board of Education. Instead of a board of managers for each of the State lunatic asylums at Trenton and at Morristown, as heretofore, a single board of seven members was established.

For the sake of economy, the board of commissioners of the sinking fund was abolished, and its powers and duties were conferred upon the State Treasurer, without increasing his salary. An unsalaried commission was created to represent the State at the World's Columbian Exposition, and the sum of \$20,000 was appropriated to defray necessary expenses in securing a proper exhibit for the State.

The State was redistricted for members of Congress, on the basis of the census of 1890, as follows:

First District, counties of Camden, Cumberland, Cape May, Gloucester, and Salem.

Second District, counties of Atlantic, Mercer, Burlington, and Ocean.

Third District, counties of Somerset, Middlesex, and Monmouth.

Fourth District, counties of Sussex, Warren, Hunterdon, Morris, and the following townships in Essex County: Belville, Bloomfield, Caldwell, East Orange, Franklin, Montclair, and Livingston.

Fifth District, counties of Bergen and Passaic, and the following portion of Hudson County: townships of Guttenburg, North Bergen, Union, Weehawken, West Hoboken, and town of Union.

Sixth District, city of Newark in Essex County.

Seventh District, cities of Jersey City and Hoboken, and townships of Harrison and Kearney, all in Hudson County.

Eighth District, county of Union, city of Bayonne in Hudson County, and city of Orange and townships of Clinton, South Orange, West Orange, and Milburn in Essex County.

The State was also divided for members of the Assembly into sixty districts, each district having one Assemblyman.

Authority was given the Court of Pardons to license the release on parole of any convicts in the State penal institutions, on such conditions as it

should deem proper, such license being signed by the Governor and being revocable by the court, or by the Governor when the court is not in session.

It was made unlawful for any corporation to retain or keep back, without the voluntary consent of its workmen, any part of the wages due them under pretense of assisting or relieving them when sick or disabled; and corporations were forbidden to require their workmen to enter into any contract by which their wages may be retained as aforesaid.

Provision was made at this session for a State board of taxation, consisting of three members to be appointed by the Governor with the consent of the Senate, and holding office for five years. The duty of securing the equalization, revision, and enforcement of taxation in the State is intrusted to the board, which is given authority to compel the attendance of witnesses and administer oaths.

Any tax payer feeling aggrieved by the assessment of taxes, or by the action of any board of tax review or commissioners of appeal, and any taxing district or county feeling aggrieved by the action of any board or boards of equalization, may file a petition with this board and have his complaint heard, such board having authority to revise and correct the taxes. Other acts of the session were as follow :

Repealing the act of 1890 providing for the formation and government of boroughs.

Designating the Rutgers Scientific School as the beneficiary of the funds granted by Congress in aid of colleges of agriculture and the mechanic arts in the several States.

Establishing a department of banking and insurance under the control of a commissioner to be appointed by the Governor. The powers of the Secretary of State as Insurance Commissioner are vested in this department.

To provide for the formation and government of villages.

Providing for a commission to revise and consolidate the general statutes of the State relating to villages, towns, and townships.

Giving to husbands the right to take the personal estate of their wives without administration when the estate does not exceed \$200.

Providing that honorably discharged Union soldiers and sailors holding salaried appointive offices in any city or county shall not be removed for political reasons, but only for good cause shown after a hearing.

Providing for State policemen, and defining their powers and duties.

Providing for the establishment of libraries of professional books in the several counties, for the use of teachers in the public schools.

To abolish the office of chosen freeholders in certain towns, boroughs, and incorporated villages.

Providing a new system of police courts and police justices in cities of the first class.

Revoking the charters of all corporations that have heretofore failed to pay State taxes imposed upon them by law.

Authorizing courts of common pleas to license social clubs to sell liquor.

To create county boards of license commissioners.

Providing for municipal boards of street and water commissioners in cities of the first class.

Providing for the establishment of fish and shell-fish cultural and biological stations in the State.

To provide for the appointment of commissioners for the promotion of uniformity of legislation in the United States.

Giving to laborers employed on public works in any

city, and to persons furnishing materials for the same, a lien on the public moneys of the city due or to be due under the contract of said city with any person or persons by which such public works are being constructed.

Providing for the permanent improvement of public roads, the expense to be borne in part by the State and in part by the counties.

Appropriating \$5,000 for stocking the waters of the State with food fishes.

Appropriating \$5,000 to establish a manual training school, and \$7,000 to erect a chapel for religious purposes at the State Reform School for Juvenile Offenders.

Accepting and assenting to the act of Congress refunding to the States the proceeds derived from the direct-tax levy authorized in 1861.

Making every Saturday from 12 o'clock noon until 12 o'clock midnight a legal holiday.

Education.—The school census of 1891 shows 430,340 children in the State between the ages of five and eighteen years, an increase of 19,828 over 1890. There were enrolled in the public schools during the year 237,500 children, an increase of 3,428; the number attending private schools was 54,865, an increase of 7,586, and the number not attending any school was 137,975. The average daily attendance was 146,713. The number of male teachers employed was 760, with an average salary of \$76.38 per month; the number of female teachers was 3,857, with an average salary of \$44.40 per month. The total value of school property was \$9,098,576. During the school year a total of \$3,985,612.81 was expended in the State for public-school purposes, the following being the principal items of expenditure. For teachers' salaries, \$2,443,061.50; for fuel, \$98,064.29; for building and repairing school-houses, \$680,831.97; for janitors' salaries, books, stationery, taking census, etc., \$408,666.91. At the State Normal School the attendance in 1891 was 326 pupils, and at the Model School connected therewith 541. The revenue for the support of these institutions, in addition to the \$20,000 annually appropriated by the State, is derived from the tuition fees of the Model School, amounting to \$15,729.63, and from other sources \$3,421.26. This, with the balance of \$7,271.07 on hand at the date of the last school treasurer's report, made the total receipts \$46,421.96. The disbursements amounted to \$38,781.60.

Charities.—At the Morristown Insane Asylum there were under treatment on Oct. 31 893 patients, of whom 455 were males and 443 females. During the year preceding 219 patients were admitted and 207 discharged. The daily average was 899. All except 103 of the 898 patients remaining on Oct. 31 were supported at public expense. The receipts of the institution, including balance on hand at the beginning of the year, were \$227,973.26; the expenditures were \$221,528.64, leaving a balance on Oct. 31 of \$6,444.62. At the Trenton Insane Asylum the daily average of patients for the year ending Oct. 31 was 802. There were admitted during the year 202 new patients, 169 were discharged, and there remained 820 patients in the institution at the close of the year, of whom 412 were males and 408 females. All except 95 of these are supported at public expense. The receipts, including balance on hand at the beginning of the fiscal year, amounted to \$221,347.73, the disbursements amounted to \$180,-

439.18, leaving a balance on hand Oct. 31 of \$40,908.55.

At the Institution for Feeble-minded Women there were 46 patients at the close of the fiscal year, an increase of 17 over the previous year. The sum of \$8,960.21 was received from various sources, of which the State paid \$8,464.56. The institution expended \$8,589.68. The last Legislature amended the law so as to give this institution the care of feeble-minded girls of the age of twelve years and upward. Additional accommodation for 50 inmates has been provided. At the School for Deaf Mutes there were 139 pupils during the fiscal year, an increase of 20 over the previous year. The average attendance was 124. The State pays to maintain the institution \$76 per quarter for each pupil, making a total of \$37,924 for the last fiscal year.

Soldiers' Home.—On Oct. 31 there were 457 inmates in the Soldiers' Home at Kearney, a decrease of 6 from the preceding year. During the year 350 were admitted, 262 discharged, 19 expelled, 46 died, and 29 were dropped from the rolls. The average number per day was 472. Since the home was opened, there have been 17,334 soldiers cared for by the institution. The total receipts for the year were \$83,188.12, and the disbursements were \$72,986.32, leaving a balance in the hands of the treasurer of the home of \$10,201.30.

Prisons.—The daily average of prisoners confined in the State Prison during the last fiscal year was 951, of whom 919 were males and 32 females. This is a decrease of 22 in the daily average. The number of prisoners at the close of the fiscal year was 980, an increase of 77 over the previous year. The expense of maintaining the institution was \$173,869.31, of which \$79,869.31 were paid from the receipts for labor.

At the State Reform School there were 346 boys at the opening of the fiscal year. During the year 202 were received and 219 discharged, leaving 229 remaining on Oct. 31. The receipts, including a balance of \$5,318.23, were \$60,211.11 and the expenses were \$55,980.81.

On Oct. 31, 1890, there were 63 girls in the State Industrial School for Girls and 16 out at service. On Oct. 31, 1891, there were 70 girls in the school and 20 under indenture. The total receipts from all sources during the year were \$13,516.47; the expenditures were \$12,301.71.

Militia.—The National Guard consists of 325 officers and 3,909 enlisted men. This force is organized into 57 companies of infantry and two Gatling-gun companies. The expenditures for National Guard purposes for the last fiscal year amounted to \$124,418.68.

The State now owns a tract of 119 acres at Sea Girt, which is expressly reserved for the encampment and other uses of the Guard.

Savings Banks, etc.—Twenty-five savings banks reporting to the Secretary of State show on Jan. 1, 1891, total deposits amounting to \$32,462,603.35 due to 125,073 depositors, and a surplus of \$2,950,303. On Jan. 1, 1890, the number of depositors was 117,999. Reports to the State Bureau of Statistics show that during 1891 24 new building and loan associations were incorporated, making a total of 270 associations now in active operation, with a net capital approximating \$23,500,000 represented by 410,000 shares

and 77,000 shareholders, of whom probably 18,000 are paying for homes with money borrowed from the respective associations. The increase of the net capital of these associations during 1891 was approximately \$1,000,000; in the number of shares, 30,000; in the number of shareholders, 5,000.

Abandoned Farms.—Statistics collected in 1890 show a total of 313 abandoned farms in the State covering 18,487 acres. In Atlantic County there are 55 abandoned farms, covering an acreage of 2,755; Cape May, 15, covering 2,000 acres; Monmouth, 5, 215 acres; Ocean, 16, 916 acres; Camden, 4, no acres given; Passaic, 10, 1,284; Bergen, 20, 836; Cumberland, 24, 570; Mercer, 10, 688; Middlesex, 12, 456; Morris, 5, 1,270; Burlington, 32, 993; Gloucester, 3, 150; Somerset, 60, 2,090; Hunterdon, 1, 73; Sussex, 33, 3,238; Warren, 8, 956. Considering that there are a total of 34,307 farms in the State with an area of 2,929,773 acres, the percentage of those abandoned is very small. Almost one third of the farms reported abandoned are located in the counties of Somerset, Sussex, and Warren.

Political.—One third of the Senators and all of the members of the Lower House of the Legislature were chosen at the November election of this year. Seven Democrats were elected to the Senate, and that body in 1892 will contain 16 Democrats and 5 Republicans. Eighteen Republicans and 42 Democrats were elected to the lower house.

NEW MEXICO, a Territory of the United States, organized Sept. 9, 1850; area, 122,580 square miles. The population, according to each decennial census, was 61,547 in 1850; 93,516 in 1860; 91,874 in 1870; 119,565 in 1880; and 153,593 in 1890. Capital, Santa Fé.

Government.—The following were the Territorial officers during the year: Governor, L. Bradford Prince, Republican; Secretary, Benjamin M. Thomas; Auditor, Trinidad Alarid, succeeded by Demetrio Perez; Treasurer, Antonio Ortiz y Salazar, succeeded by Rufus J. Palen; Solicitor-General, Edward L. Bartlett; Superintendent of Public Instruction (an office created by the Legislature in February), Amado Chavez; Secretary of the Bureau of Immigration, Max Frost; Chief Justice of the Supreme Court, James O'Brien; Associate Justices, William D. Lee, Edward P. Seeds, John R. McFie, and Alfred A. Freeman.

Finances.—The total expenses of the Territory for the fiscal year ending March 3, 1891, were \$178,679.23. On that day the Territorial debt amounted to \$866,433.04, of which \$720,000 was a bonded debt, and \$146,433.03 a floating debt represented by outstanding warrants. The credit of the Territory has appreciably advanced since the funding act of 1889 has become operative, but taxation under it is burdensome. The tax rate levied for Territorial purposes in 1891 was 9 15-100 mills, in addition to which a 2 mill tax for schools is levied uniformly in each county.

The total assessed valuation of property in the Territory in 1889 was \$46,041,010, and in 1890 \$45,199,847.91. This decrease was caused by a reduction in the value of cattle made generally throughout the territory in 1890.

Legislative Session.—The twenty-ninth Territorial Legislature convened at Santa Fé, on

Dec. 29, 1890, and adjourned on Feb. 26 following. An important result of the session was the passage of acts for the better management and support of the public schools. A Territorial Superintendent of Public Instruction, who with the Governor and three others shall form a Territorial board of education, was for the first time placed at the head of the public-school system. In addition to the work of general supervision, he is required to hold teachers' institutes annually in each county and to collect statistics of all public and private schools. He is appointed for two years by the Governor, with the consent of the Legislative Council. Each county shall elect biennially at the general election a county superintendent of schools, who shall have charge of the schools within the county, while the local affairs of each school district shall be managed by a board of three directors elected annually. An annual tax not exceeding 3 mills on the dollar shall be levied on all taxable property in the Territory, the proceeds of which for each county shall be paid to the county treasurer, and distributed by him for the purpose of paying teachers' wages. In each school district the school directors are authorized to levy a tax of not over 5 mills on the dollar to raise additional money for schools therein, and each district may issue bonds for building and completing school-houses, providing for their payment at maturity by the levy of a special tax of not over 5 mills on the dollar. A poll tax of one dollar is also levied, and the proceeds devoted to school purposes. The payment of this tax is a prerequisite for voting. The proceeds of liquor licenses are also appropriated for schools. Children between five and sixteen years of age, are required to attend the public schools at least three months in each year, unless physically disabled or living more than two miles from a school. Books are to be furnished at public expense, if the parent or guardian is unable to buy them. In place of the district schools there shall be maintained in incorporated cities and towns a system of free public schools, at the expense of such cities or towns, which shall be open not less than three nor more than ten months each year.

A high-license law fixes the following annual fees for retail liquor selling: In places having not more than 500 inhabitants, \$100; in places having not less than 500 and not more than 1,000 inhabitants, \$200; and in places having over 1,000 inhabitants, \$400. Incorporated cities or towns may impose an additional license fee if permitted by their articles of incorporation or ordinances. The sale of liquor to a person who is in the habit of becoming intoxicated after notice from his relatives, or to a minor without consent of parent or guardian, is prohibited. Fines are imposed for drunkenness, and liquor shall not be sold on election days. The effect of this act was to close nearly two thirds of the saloons before the end of the year. An act was passed limiting express rates and taxing express companies on their receipts for transportation within the Territory.

The issue and sale of Territorial bonds to the amount of \$25,000 was authorized for the purpose of raising money to erect a building for the Insane Asylum at Las Vegas. For securing the

representation of New Mexico at the World's Columbian Exposition at Chicago the sum of \$25,000 was appropriated. The tax rate for Territorial purposes for the next two years was fixed at 6½ mills annually. Other acts of the session were as follow:

Repealing the provisions of law requiring members of the Territorial House of Representatives and probate judges to be twenty-four years of age, members of the Territorial Council to be thirty years of age, and the Delegate to Congress to be twenty-five years of age.

To provide for the printing of bills, reports, and other documents in the Spanish language.

Declaring trusts, pools, and combinations in restraint of trade to be illegal, and punishing persons connected therewith.

Authorizing the refunding of town and city bonds.

Increasing the bond required of the Territorial Treasurer from \$20,000 to \$400,000, and of the Auditor from \$5,000 to \$100,000.

Providing a general law for the incorporation of towns and villages.

Designating the second Friday in March as Arbor Day.

Requiring the publication of legal notices in both English and Spanish.

To punish persons unlawfully destroying or injuring private property and unlawfully fencing lands to which they have no title.

Repealing the provision of the compiled laws which adopts the laws concerning descents, distribution, and wills contained in the treatise of Pedro Murillo de Lorde upon these subjects.

Providing a method for establishing the rights of appropriation of water for ditches, canals, or feeders of reservoirs, and requiring registration of all such rights hereafter made, changed, or enlarged.

To punish the larceny of ores from mines.

Relating to the termination of oral leases of mines.

Assenting to the act of Congress, approved Aug. 30, 1890, providing for the endowment and support of agricultural colleges.

Authorizing and requiring counties and municipalities to compromise and refund their matured and maturing indebtedness.

Revising and moderating the laws for the punishment of murder and theft in their various forms.

Authorizing counties to issue bonds for the purpose of building court houses, jails, and bridges to an amount not exceeding, with all other bonded indebtedness, 4 per cent. of the assessed valuation.

Providing for the incorporation of the proprietors of community land grants.

Creating the county of Guadalupe out of a portion of the county of San Miguel.

The Legislature failed to pass a bill reapportioning, according to the census of 1890, the members of each House among the several counties. This duty, thereupon, fell by law upon the Governor, who published his order of reapportionment a few weeks after the adjournment.

Education.—The following statistics present approximately the condition of the public schools at the beginning of the year: Number of public schools, 533; number taught in English, 169; number taught in Spanish, 135; number taught in both languages, 228; number of school-houses, 132; male teachers, 373; female teachers, 179; pupils enrolled, 24,767; average daily attendance, 17,218; raised by taxation for schools, \$130,563. The most immediate results of the new school law of this year are seen in the larger towns. In East Las Vegas a beautiful stone school-house has been erected, and five other districts in San Miguel County have voted bonds

for a similar purpose. In Albuquerque the schools have opened with 12 teachers, under a city superintendent.

The Agricultural College is in full operation at Mesilla Park, having 125 pupils at the close of the year. The Territorial University building has been completed during the year, and will be used for the normal school at an early date. The laboratory building for the School of Mines is in process of erection. A school for the deaf and dumb has been conducted at Santa Fé during the year, having about 15 pupils.

Charities.—The Legislature of this year tardily acknowledged the claims of the pauper insane by passing an act appropriating \$25,000 for an asylum. At the close of the year the construction of the building had so far advanced that its completion in May, 1892, was assured. The Territory supports, by an annual appropriation of \$5,000, an orphan's home and industrial school at Santa Fé.

Penitentiary.—At the close of the year there were 113 convicts in the Territorial Penitentiary, of whom 5 were women. The greater number of convicts have been employed in brick-making.

Militia.—The Territorial militia consists of 1 regiment of cavalry of 6 companies, containing 280 men, and 1 regiment of infantry of 6 companies, containing 298 men.

Lumber.—The lumber industry of central and northern New Mexico is increasing. This region contains extensive forests of fine yellow pine. On the Tierra Amarilla grant 5 mills are running, turning out 1,000,000 feet a month; on the Petaca grant 2 mills are in operation, turning out about 400,000 feet a month; on the Pecos river the Cooper mill turns out about 100,000 feet a month. Other mills in the Santa Fé range, in the Sandia mountains, and in the Zúñi mountains produce about 1,000,000 feet a month. The mills on the Maxwell grant turn out over 1,000,000 feet a month.

Irrigation.—In New Mexico crops were raised by irrigation in the census year ending June 30, 1890, on 91,745 acres, or 143.35 square miles—a little more than one tenth of 1 per cent. of the entire area of the Territory. The aggregate number of farms was 4,174 (not including those of the Pueblo Indians), and of these 3,085, or nearly three fourths, depended upon irrigation. The average size of irrigated farms, or rather of irrigated portions of farms, was 30 acres.

Stock-raising.—The number of cattle returned for taxation in 1890 was 1,129,088. Owing to considerable losses in some localities during the winter, it is probable that the number has not increased in the mean time. Their assessed valuation in 1890 was \$9,336,038.50. The number of sheep in 1890 was 1,172,249, valued at \$1,262,603; the number of horses, 52,465, valued at \$1,201,105; the number of mules, 2,713, valued at \$112,734; swine, 5,319, valued at \$15,399; goats, 55,775, valued at \$61,127; and burros, 3,091, valued at \$16,197.50.

Mining.—The mining industry throughout the Territory has increased in amount and profit during the past year. The beneficial effects of the tariff on lead are seen in all the camps where an argentiferous galena is the staple ore. Relieved of competition with the ill-paid labor of Mexico, every such mine is running to its full

capacity, and the smelters are not able to receive all the ore that is produced. This will probably result in the establishment of a large smelting plant at Cerrillos. From the borders of Colorado to the Mexican line general prosperity prevails in mining matters. The total mineral product for 1890 was almost exactly \$3,000,000.

Election Dispute.—The beginning of the year found two of the outgoing county commissioners of Santa Fé County, John H. Sloan and Teodoro Martinez, and the clerk of the board, Pedro Delgado, lying in the county jail for contempt of the orders of Justice Seeds of the Territorial District Court. The offense of the commissioners consisted in disobeying the injunction of the court by issuing certificates of election to the Democratic candidates for certain local and Territorial offices voted for at the election of November, 1890, and in refusing to canvass the vote of all the precincts of said county at the election, as the court had ordered. (For a statement of the events prior to Jan. 1, 1891, which ended in the imprisonment of these officials, see the "Annual Cyclopædia" for 1890, page 610.) The offense of Delgado arose from his refusal to recognize or record the doings of the Republican county commissioners, who had been recognized by Justice Seeds as the legal board. On Jan. 12 the imprisoned commissioners caused a writ of *habeas corpus* to be sued out of the Territorial Supreme Court, for the purpose of bringing the question of the legality of their imprisonment before that court. A hearing was had, and early in February that court (Chief-Justice O'Brien dissenting) decided that the district court had full jurisdiction to issue the orders that it had made respecting the duties of the commissioners, and that the petitioners were in contempt for disobedience thereof, and remanded them to jail until they should pay the fine of \$200 each and costs, imposed by the district court. From this decision an appeal was allowed to the United States Supreme Court, pending which the court released the prisoners on bail.

Meanwhile clerk Delgado in January had sued out a similar writ of *habeas corpus*, bringing his case also before the Territorial Supreme Court. A decision was rendered in this case in February, in which the court (Justice O'Brien again dissenting) found no excuse for the disobedience of the orders of Justice Seeds. An appeal to the United States Supreme Court was allowed, but in this case the court refused to release the prisoner on bail. The United States Supreme Court reached a decision late in May, sustaining the decree of the Territorial court. Nothing then remained for Delgado but to stay in prison indefinitely, or obey the court by recognizing the Republican board of commissioners and carrying out their orders as their clerk. The latter course he finally decided to take early in June, after he had been incarcerated nearly five months. The commissioners were also obliged to submit and pay their fine, thus ending a most remarkable attempt to defy a legal tribunal.

NEW YORK, a Middle State, one of the original thirteen, ratified the Constitution July 26, 1788; area, 49,170 miles. The population, according to each decennial census, was 340,120 in 1790; 589,051 in 1800; 959,049 in 1810; 1,372,111 in 1820; 1,918,608 in 1830; 2,428,921

in 1840; 3,097,394 in 1850; 3,880,735 in 1860; 4,382,759 in 1870; 5,082,871 in 1880; and 5,997,853 in 1890. Capital, Albany.

Government.—The following were the State officers during the year: Governor, David B. Hill, Democrat; Lieutenant-Governor, Edward F. Jones; Secretary of State, Frank Rice; Comptroller, Edward Wemple; Treasurer, Elliot Danforth; Attorney-General, Charles F. Tabor; State Engineer and Surveyor, John Bogart; Superintendent of Public Instruction, Andrew S. Draper; Superintendent of Prisons, Austin Lathrop; Superintendent of Insurance Department, Robert A. Maxwell; Superintendent of Bank Department, Charles M. Preston; Superintendent of Public Works, Edward Hannan; Commissioner of Statistics of Labor, Charles F. Peck; Railroad Commissioners, William E. Rogers, J. V. Baker, Jr., and Michael Rickard; Chief Judge of the Court of Appeals, William C. Ruger; Associate Judges, Robert Earl, Francis M. Finch, Charles Andrews, Rufus W. Peckham, John C. Gray, and Denis O'Brien.

Finances.—The State Treasurer is Elliot Danforth, salary \$5,000; and the Comptroller Edward Wemple, salary \$6,000.

The State debt has been reduced during the year by the payment of \$100,000 Niagara reservation bonds and \$1,936,650 canal debt. On Sept. 30, 1891, its amount was \$2,927,654.87, classified as follows:

General fund (Indian annuities), \$122,694.87; canal debt, \$2,404,960; Niagara reservation bonds, \$400,000; total, \$2,927,654.87; aggregate sinking fund, \$1,913,030.99. Total debt unprovided for, but not yet due, \$1,014,623.88, which is made up as follows: Canal, \$491,929.01; Niagara reservation, \$400,000; general fund (Indian annuities), \$122,694.87.

Part of the canal debt matures on Oct. 1, 1892, and the remainder on Oct. 1, 1893. The balance of \$491,929.01, now unprovided for, will not have to be paid by tax, as there is expected to be a surplus in the canal fund revenue to meet it. If that prediction be well founded, the State has levied its last tax for the payment of the canal debt.

The Niagara Park debt matures at the rate of \$100,000 each year, but its bonds are held by the State, and can be paid at any time from the surplus now in the treasury if the Legislature so direct. They draw interest at the rate of $2\frac{1}{2}$ per cent. a year.

The principal of the general fund debt for Indian annuities, \$122,694.87, is an imaginary indebtedness and does not actually exist, the interest on about that sum being annually appropriated by the Legislature as annuities to the Indians.

From the foregoing, therefore, it appears that the State debt is practically wiped out.

The report of the State Comptroller shows for the fiscal year ending Sept. 30, 1891, the receipts were \$21,243,639.35, and expenditures were \$19,886,041.65. The common-school fund, in securities and money in the treasury, amounted to \$4,193,140.77, the United States deposit fund was \$4,017,220.71, the literature fund was \$284,201.30, and the college land scrip fund was \$474,409.12, the total for these four trust funds being \$8,968,971.90. The Comptroller says:

In my report last year it was estimated that the actual surplus on Sept. 30, 1891, would be \$1,989,976.95; the actual surplus is \$5,022,773.98, exceeding the estimate by the sum of \$3,032,797.03. This difference is made up by receipts from the United States for direct tax refunded to the State amounting to \$2,213,330.86, from corporation taxes, collateral inheritance taxes, from the United States for the Soldiers and Sailors' Home, and from lapsed appropriations. The sum of \$2,213,330.86 was received from the United States Government and paid into the State treasury on March 18, 1891, on account of the Federal direct tax of Aug. 5, 1861, collected by the State from its citizens and paid into the Federal Treasury, and refunded in pursuance of an act of Congress approved March 2, 1891.

The entire residue of Niagara Park debt bonds is held in trust, amounting to \$400,000, maturing at the rate of \$100,000 per year and interest from July 1, 1891, at 24 per cent. a year.

The unpaid canal debt stock amounts to \$2,404,960, maturing in 1893 at 6 per cent. interest a year, which can readily be called in and canceled upon fair terms. It will be reduced to the extent of \$495,360 by taxes levied and appropriated for the purpose in 1890 and 1891, but which had not been collected and paid into the treasury at the end of the last fiscal year.

The moneys and securities in the sinking fund, amounting to \$1,913,030.99, can be applied toward the payment of the debt and interest due.

For 1891 the State tax was \$5,196,666.40, the rate being 14 mill and the valuation of property \$3,779,393,746, which is the lowest tax rate since 1855. The direct school tax produced \$3,830,999.19; \$4,466,517.83 was spent from the treasury for educational purposes; and total expenditure, State and local, for the schools was \$17,968,929.99.

The State debt at the end of the fiscal year was \$2,927,654.87, and the surplus, including as assets claims not yet collected, was \$5,022,773.98.

The total expended on the new Capitol is \$19,096,934.35; collections from corporation taxes were \$1,350,338.53; collections from taxation of foreign banking capital, \$36,184.02.

Legislative Session.—The Legislature of 1891 began its session on Jan. 6 and continued until April 30, making the shortest session since 1874. Owing to a political discussion in the Senate over a resolution introduced by the Republicans and opposed by the Democrats, to allow the Senate Committee on Canals to investigate the canals, practically no business was done in the last two weeks of the session. The number of chapters of new laws is 389, which is smaller than the average for many years. The deadlock caused much bitter feeling between the Senate and the Assembly. A bill was passed by the Assembly taking away the confirming power of the Senate and placing all power of appointments in the hands of the Governor. The Senate refused to consider this bill.

The Legislature of 1890 resolved that the popular vote on the prohibition amendment should take place in the spring of 1891. The Senate passed a bill making an appropriation for the expenses of the election. But this was delayed in the Assembly by amending so that the election should not take place until November, 1891. Owing to the political deadlock this bill was not passed, and the election can not take place until 1892.

Bills failed providing for a State census which should have been taken in 1885, and for reapportioning the State into congressional districts. A law was enacted to take the place of a special charter for the Young Women's Christian As-

sociation of Brooklyn, allowing any twenty or more women who are citizens of the State to form themselves into an association for the improvement of women.

A new law provides that no life-insurance company doing business within this State shall make any discrimination between white persons and colored persons, wholly or partially of African descent, as to the premiums or rates for policies upon the lives of persons. Another law incorporates several Methodist churches in the Genesee Conference, with Rochester as a center, owning property to the value of \$400,000 in all, and such other religious societies and pastors as shall wish to be associated with them, to carry on co-operative insurance against loss or damage by fire or lightning. Real property owned by any incorporated association of present or former volunteer firemen, actually and exclusively used and occupied by such corporation, and not exceeding \$15,000 in assessed value, is exempted from taxation. It is provided that the personal property, franchises, and business of all fire and marine companies incorporated in this State, or any other State or country, shall hereafter be exempt from taxation and assessment for State purposes; but they shall in all other respects be liable to assessment and taxation.

The new commission in lunacy having reported good progress in the work of transferring the insane poor from county institutions to the State hospitals, an appropriation of \$454,000 was passed for additions to present State hospitals for the accommodation of the increased number of patients. A special commission was appointed to decide upon the plans, and work is to begin at once upon the hospital buildings in Utica, Poughkeepsie, Middletown, and Binghamton, with additions later in Buffalo and Rochester. The State bought for \$100,000 the Monroe County asylum at Rochester. Every county in the State, with the exception of New York and Kings specially exempted, now comes under the State-care act. The Assembly Committee on Public Lands and Forestry was ordered to investigate the Forestry Commissioners. This was done, and the commissioners were found to have been negligent in their duties, ordered by the last Legislature, in appraising and buying lands for an Adirondack park. The minority report went no further than this, but the majority report found the commission guilty of criminal negligence, and introduced a bill legislating it out of office. The Assembly refused to adopt the majority report, but it did adopt the minority report, thus practically killing the bill removing the commission from office. The excitement attending the investigation made it impossible to pass any of the bills relating to the Adirondacks.

In the supply bill \$2,400 was appropriated as the contribution of the State of New York to the erection of the bronze tablet on the battle field of Gettysburg, at the spot known as the "high-water mark of the rebellion"; also \$10,000 for the bronze statue to be placed on the State monument on the same field, the terms of office of the commissioners being extended until May 30, 1892, in order that they may complete this work.

An important law provides that in the future only such canal bridges shall be built as shall be

absolutely necessary, that they shall be of the plainest construction, and that any increased expense for better bridges shall be borne by the respective localities benefited.

A charter was granted to the Whirlpool Bridge Company to construct a bridge north of the whirlpool in Niagara river, with a capital of \$500,000.

The law of 1890 relating to the repair and improvement of highways was repealed. The oleomargarine act was amended so as to make it a misdemeanor for persons to furnish their servants with oleomargarine or skim milk for eating or cooking. The State will pay 30 cents a day per head for tramps sentenced to county penitentiaries.

The electoral reform law of 1890 was amended so that the certificates of municipal nominations are to be filed with the city clerks, not the county clerks; that the number of signers for independent nominations is increased from 1,000 to 3,000 for State officers, 100 to 250 in the Assembly districts, and from 250 to 500 in the county or Senate districts; that the blank ballot is abolished; that the party names are printed on the ballot; that the number of ballots for each 50 voters is reduced from 200 to 100; that election districts shall contain not over 400 instead of 800 voters, and shall be divided before Aug. 1; that the ballot clerks shall not write initials on ballots; that voters need not stay three minutes in the booths; that when ballots seem to have been marked for identification they shall be preserved, so that their validity may be examined; and that no mark shall be put on pasted ballots. The registry laws were amended so as to reduce the number of inspectors in the rural districts from five to three, and the number of registry days outside of cities from three to two. A concurrent resolution was passed, which must pass another Legislature, transferring to the courts contested elections for the Legislature. A concurrent resolution was passed providing for additional judges to the Court of Appeals.

An appropriation of \$10,000 was made for university extension under the care of the regents.

New charters, making radical changes, were granted to Buffalo and Albany. The charters of Syracuse, Kingston, and Rochester were amended. Utica was allowed to extend its boundaries northerly. Albany was authorized to issue \$253,000 in bonds for the erection of public buildings.

Miscellaneous laws were passed as follow: Exempting household groceries from levy under executions; repealing the law of 1890 requiring statements to be filed at periods of twenty years showing the amounts due on real estate, bonds, and mortgages; providing that where a trust is or shall be expressed in the instrument creating the estate, every sale or other act of the trustees in the contravention of the trust shall be void; regulating the keeping of intelligence offices, employment bureaus, etc., in Brooklyn; providing that intelligence offices in New York must return fees to applicants for positions where the latter have not obtained positions, and to employers where servants have not remained more than a month.

Education.—This branch of the State government is under the charge of a State superintendent, whose salary is \$5,000. The present incumbent is Andrew S. Draper. In his annual report he shows that the number of children in the State of school age (i. e., between five and twenty-one years) in 1891 was 1,821,773. The number of children attending the common schools in the same year was 1,054,044. More than 767,000 children of school age were either not in school at all, or received instruction elsewhere than at the public schools. The cost of supplying this education to somewhat more than half the children of school age in the State was \$20,269,118.29, an average cost of \$19.22.

Tabulated statements are submitted showing that since 1861 there has been a steady increase in the number of children of school age in the cities, and a gradual decrease in the towns. The same condition applies to the number of children in actual attendance at the public schools. In 1861 there were 270,926 children attending the city schools, and in 1891 513,066. In the towns the figures were: 1861, 601,928; 1891, 540,978. A comparison of the tables for the years 1890 and 1891 shows that, although the reported number of children of school age in 1891 was 22,823 less than in 1890, yet the number of children in attendance on the public schools was greater by 11,884. With reference to the increase in the minimum length of the school year from twenty-eight to thirty-two weeks in the rural districts, he says that it is entirely practicable to maintain schools in the rural districts for thirty-eight or forty weeks in the year. The number of teachers employed in the public schools in 1891 was 31,983, of which 10,482 taught in cities and 21,500 in the towns. There were 5,359 male teachers and 26,623 females. The aggregate amount paid in wages to these teachers was \$11,012,986. There were 12,072 public school-houses in the State last year. Of those, 45 were log houses, 10,126 frame, 1,573 brick, and 328 stone. The cities had 595 school-houses, and the towns 11,477. The average value of the school-houses is \$51,246 in the cities, \$1,700 in the towns, and \$4,142 in the State at large. The cost of maintaining the public schools in 1891 was \$17,174,835. Between 1887 and 1890 special efforts were made to improve the school property of the State. The importance of the subject was frequently presented at educational conventions, teachers' institutes, and school meetings; designs for school-houses were published by the department; prizes were offered for the best-kept school grounds in the common-school districts, and legislation was secured which required the most essential improvements. The result of the agitation was that \$3,634,917.07 were expended in improvement of school property in 1890, against \$1,405,773.51 in 1886.

The cost *per capita* of total population in this State (census 1890) for the maintenance of public educational interests last year was \$2.90.

His report says that the observance of Arbor Day has called attention to the fact that many school grounds are too small to admit of ornamentation, and are, indeed, totally inadequate to the necessities of the schools. He thinks that every school site should contain at least half

an acre of land, and he renews his recommendation that provision be made for carrying out that idea, making it applicable at first to all school sites outside of cities and incorporated villages.

With reference to the public schools maintained on the six Indian reservations, he says that the educational facilities offered by the State for the Indian youth are inadequate. The tribal influences are against the day school. The Indian boys and girls need to be taken into an institution where all their habits can be regulated, and where they can be educated industrially. He therefore recommends that the Legislature take steps to induce the General Government to provide for the reception of our Indian children at the Indian school at Carlisle, Pa., and if such efforts do not avail, that the State appropriate \$150 per year necessary to maintain each pupil there.

He concludes his report with a reference to the steady decrease in the percentage of attendance at the public schools. He says: "The reports show that in 1851 the 'total attendance,' comprised 75.6 per cent. of the school population. This percentage has constantly fallen off with surprising regularity during the intervening forty years. In 1861 it was 65.6 per cent.; in 1871 it was 68.4 per cent.; in 1881 it was 61.4 per cent.; and in 1891 it was 57.8 per cent. This is a showing which must engage the attention of all thoughtful persons."

A State Flower.—In order to obtain an approximate decision as to the opinion of the children concerning their favorite flower, a vote was taken throughout the State on Arbor Day in 1890, when, out of a total vote of 318,079, the golden rod received 81,308 votes to 79,666 cast for the rose. But as the total vote for these two flowers did not equal half of the entire vote cast, the superintendent of public instruction decided on a second ballot, to be taken this year on the two favorites of 1890. Accordingly, on Arbor Day, May 8, 1891, a vote was taken, which resulted as follows:

PLACE OF VOTING.	Rose.	Golden rod.
In the 113 school-commissioner districts.	142,086	53,340
In the 32 cities	151,012	150,568
In the 7 normal schools	1,800	1,571
In the 2 Indian reservations	74	57
Miscellaneous	894	866
Total	294,816	206,402

The majority of the rose over the golden rod is therefore 88,414, thus establishing the rose as the State flower.

Charities.—The annual report of the State Board of Charities shows that the receipts were \$18,868,454; the expenditures, \$17,605,660; the number of public beneficiaries in the various classes of institutions on Oct. 1, 1891, was 74,773, an increase of 3,878 during the year. The principal ones were: Dependent children, 23,732; insane, 16,647; poor-house inmates, 10,637; aged and friendless, 7,464; hospital patients, 5,048.

Insurance.—This department is under the direction of a superintendent, who receives a salary of \$7,000, and a deputy, who receives a salary of \$4,500. The present superintendent is James F. Peirce; deputy, Michael Shannon. The annual

report for 1890 was issued in April, and the following is an abstract of the statements rendered by the life, fidelity and casualty, and co-operative companies.

LIFE COMPANIES.		1890.
Number.....		80
Assets.....		\$758,228,759
Reserve.....		\$685,975,368
All other liabilities.....		8,514,080
Total liabilities.....		\$694,489,398
Surplus.....		\$88,789,862
Capital stock.....		5,099,550
Premiums received.....		\$149,558,949
All other receipts.....		87,871,910
Total income.....		\$167,424,959
Claims paid.....		\$58,608,615
Dividends to policy holders.....		14,271,501
Paid for forfeited policies.....		13,827,225
Expenses.....		89,616,751
Dividends to stockholders.....		329,407
Total disbursements.....		\$126,658,529
Policies in force.....		1,272,895
Insurance in force.....		\$3,542,955,751

INDUSTRIAL RISKS.

COMPANY.	1890.	
	No. of policies.	Amount insured.
Metropolitan.....	2,096,595	\$281,115,440
Prudential.....	1,228,832	185,088,498
John Hancock.....	402,147	45,772,709
Germania.....	7,819	905,378
Total.....	3,784,886	\$412,873,025

FIDELITY AND CASUALTY COMPANIES.

		1890.
Number of companies.....		11
Assets.....		\$10,240,254
Unearned premiums.....		\$3,988,715
All other liabilities.....		825,726
Total liabilities.....		\$4,814,441
Capital stock.....		\$3,904,600
Surplus.....		1,451,212
Premiums received.....		\$7,421,587
All other receipts.....		415,568
Total income.....		\$7,837,455
Losses paid.....		\$2,656,005
Dividends to stockholders.....		576,776
Expenses.....		8,988,444
Total disbursements.....		\$7,171,225

RISKS IN FORCE.

		1890.
Accident.....		\$602,029,000
Steam boiler.....		203,759,209
Fidelity.....		158,059,459
Plate glass.....		27,049,944
Total.....		\$991,498,512

Lunacy.—The commission appointed to the charge of this subject consists of three members, as follows: Charles F. McDonald, Goodwin Brown, and Henry A. Reeves. Their annual report for the year ending Oct. 1, 1891, shows that 827 insane patients were transferred from county houses to State hospitals, of whom 392 were men and 435 were women. There are 1,215 patients still remaining in county houses, of whom 547 are men and 668 women. The commission expects,

shortly, that the 1,215 patients will be under State-care, as the construction of nearly all of the State-care buildings is well under way and will be completed by Oct. 1, 1892. Some 998 patients have been taken from county houses under State care since the State-care act went into effect in May, 1890, which provides that when the final transfer is made the care of the insane shall be a State charge, and an annual appropriation, estimated by the commission in lunacy at not to exceed \$1,300,000 for the present number of patients, will be necessary to comply with the provisions of this act.

New York and Kings Counties are not subject to the provisions of the State-care act. Under county care in New York on Oct. 1, were 5,390 patients, of whom 2,459 were men and 2,931 were women. The total shows an increase of 343 patients last year over that of the preceding year. In Kings there were 1,997 patients under county care on Oct. 1, of whom 828 were men and 1,169 women. The number of insane under county care in Kings last year shows an increase of 112 over that of last year.

The investments in hospitals amount to \$9,590,488.97. There are 9 separate institutions belonging to the State. In addition, New York County has 4 asylums for the insane, Kings County has 2, and there are 17 licensed private asylums.

The whole number of insane in custody on Oct. 1, 1891, was 16,623, as follows: State hospitals, 7,200; licensed private asylums, 847; asylums of New York and Kings Counties, 7,363; county poor-houses awaiting removal, 1,213.

This is an increase of 613 in the number of insane over the previous year, although a decrease in the ratio to population.

Banking Department.—This department is under the management of a superintendent, who receives a salary of \$5,000 a year. The present incumbent is Charles M. Preston, whose report for the fiscal year ending Sept. 30, 1891, relative to incorporated banks, individual bankers, safe-deposit companies, and trust companies, shows that 20 banks have been organized, with a capitalization of \$2,370,000. The increase of total resources of State banks on Sept. 12, 1891, over the same date in 1890 was \$4,875,738. It appears from the receiver's report of the North River Bank of New York city that he has already paid 50 per cent., and it is probable he will pay additional dividends. The increase in banking capital for the year by the formation of new banks was \$2,370,000, and the total increase in the capital of the ten associations previously organized was \$1,095,000. There has been a decrease in the banking capital of 7 banks during the same period of \$1,294,125. The outstanding circulation of banks incorporated under State laws is \$83,434. No individual banking associations were organized during the year, and but 3 are now doing business in this State. There were organized 9 national banks in the year, with a capitalization of \$1,700,000, against 20 new banks organized under the State banking act, with a capitalization of \$2,370,000. At the close of the fiscal year there were 33 trust companies in active operation in the State, 20 of them being in New York city and 7 in Brooklyn. Three new trust companies were organized.

The increase of capital of trust companies was \$563,000.

At the close of the year 19 safe-deposit companies, with a total capital of \$3,296,000, were in operation—an increase of 2—12 of which are in New York city and 3 in Brooklyn.

The securities deposited with the superintendent by the different banks and trust companies amounted, on Oct. 1, 1891, to \$2,972,878.98, an increase of \$414,360. The total expenses of the department were \$47,108. His report concludes:

I have carefully examined the revision of the banking laws prepared by the revision commission, and am of the opinion that its enactment into law would materially increase the surety, efficiency, and importance of institutions organized under the State banking laws, and the State banking system would be greatly improved thereby. The increase in the number of financial institutions throughout the State seems to be accompanied by a corresponding increase in the variety of methods in keeping accounts, and while it is not the purpose to interfere with the general book-keeping of any corporation, I am convinced that the interest of the public would be better served and the efficiency of the department materially improved if a uniform method for the original entry of deposits in every bank and trust company were made compulsory.

Most of our institutions keep separate books for the entry of deposits only, so that on examination of such deposits for any period it can be easily ascertained if the proper amounts have been carried to the general ledger; but in some instances separate deposit books are entirely ignored, the receipts from all sources appearing mixed together in the same book, and in a few cases there is no book whatever between the deposit slips and the ledgers, and in order to prove the deposits with the general ledger for any period, examiners are obliged to depend entirely on the deposit slips, unless they examine each account in the individual ledgers. I would therefore recommend the enactment of a law making it the duty of the superintendent to prescribe a uniform method of original entry, and enabling him to enforce the observance of the same.

Railroads.—There are three railroad commissioners, whose salaries are \$8,000 each. The present incumbents are Michael Rickard, William E. Rogers, and J. V. Baker, Jr. The report of the railroad commissioners for the year ending June 30, 1891, says that the business on the railroads was largely increased; the same can be said of operating expenses. During the year the board considered and disposed of 16 references by the Governor, the Legislature and committees thereof, and numerous complaints preferred by cities, towns, associations, and individuals.

The record of accidents for the year ending Sept. 30, 1891, shows a deplorable increase as compared with previous years—720 persons were killed and 1,728 injured, as compared with 695 killed and 1,434 injured the previous year. Of these, 142 were from causes beyond their control, 1,123 by their own misconduct or incaution, 46 by intoxication, and 123 indeterminable.

The report says: Much advance has been made within the past few years in the method of lighting cars by using the Pintsch system. This method of lighting is by gas manufactured from crude petroleum stored in strong iron tanks under the cars. The physical condition of railroads continues to improve. The number of railroad truss bridges in the State is about 2,500, not including the New York elevated roads, the strains

upon which have also been calculated. Some 669 truss bridges have been criticised by the board, of which 535 have been repaired by the various companies and 134 entirely rebuilt.

Prisons.—These are under the direction of a Superintendent whose salary is \$6,000. The present incumbent is Austin Lathrop.

The highest number of convicts in the State prisons during the fiscal year was 3,913, an increase of 208. The 3 prisons have 3,737 cells, and it has been necessary in many instances to place 2 convicts in one cell.

The number of industries in operation in the 3 prisons during the year was 22, and the number of men employed 2,158.

The financial results in the prisons for the fiscal year show a deficiency of \$201,645.23, an increase of \$42,629.50. This increase is explained by the losses by fire at Auburn and Clinton prisons of \$37,697.60; the increased cost of maintenance, \$30,107.33; and the falling off of \$80,012.19 in manufacturing earnings at Sing Sing, owing to the reduction in the appraised value of the assets of the industries made when a change of wardens took place in April, 1891. The total earnings were \$19,461.52 greater than those of the previous year.

The earnings and expenditures for care and maintenance were divided among the 3 prisons as follow:

SING SING.	
Expenditures for care and maintenance.....	\$189,229 81
Miscellaneous earnings.....	\$8,806 83
Manufacturing earnings.....	64,316 40
	<hr/> 72,623 23
Deficiency.....	\$116,606 08
AUBURN.	
Expenditures for care and maintenance.....	\$139,116 83
Miscellaneous earnings.....	\$5,128 28
Manufacturing earnings.....	\$114,945 68
Less loss by fire.....	23,795 12
	<hr/> 91,150 51
	<hr/> 96,278 79
Deficiency.....	\$42,837 59
CLINTON.	
Expenditures for care and maintenance.....	\$130,815 29
Add loss by fire.....	5,718 82
	<hr/> \$136,029 11
Miscellaneous earnings.....	\$5,951 39
Manufacturing earnings.....	\$96,064 77
Less loss by fire.....	8,188 66
	<hr/> 87,876 11
	<hr/> 93,827 50
Deficiency.....	\$42,201 61
Total deficiency in the three State prisons..	\$201,645 23

During the year, in certain articles published in the public prints of the State, charges were made of the cruel and inhuman treatment of the prisoners confined in the State prison at Dannemora, and of improper conduct on the part of the prison official in the administration of the affairs of such prison and of its discipline; in consequence of which the Superintendent of State Prisons appointed a committee consisting of Oscar F. Craig, chairman of the State Board of Charities; W. M. F. Round, secretary of the Prison Association of the State of New York; and Lewis Balch, secretary of the State Board of Health, to investigate the matter. After careful examination a negative report was returned.

Factory Inspection (James Connolly, State Factory Inspector).—The sixth annual report of this department shows that in 10,112 factories visited during the year there were employed 422,070 persons, of whom 17,495 were children between fourteen and sixteen years of age. There were 106 children under sixteen reported as having been injured more or less seriously in factories during the year, and 23 children were fatally injured. The employment of young girls in the tobacco industry is condemned because of the injury to their health, and it is urged that they be prohibited from working at this trade.

The inspectors served notices of suit for violation of the weekly payment law upon the Cha-teaugay Ore and Iron Company, of Plattsburg; the Crown Point Iron Company, of Crown Point; the Shanley & Alfred Lumber Company, of Shanley; and the St. Regis Leather Company, of St. Regis Falls; and it is expected that suits will be brought promptly to trial.

The report shows that New York State has the best law so far as it applies to the employment of children in factories, but it is defective in not prohibiting children under fourteen from being employed in mercantile houses. Statistics are given showing that the employment of children is being rapidly diminished. In 1887 there was an average of 82 children between the ages of fourteen and sixteen years in every 1,000 persons employed in the factories which were inspected; in 1888 this was reduced to 66 in each 1,000; in 1889 there were 53; in 1890, 43; in 1891, 41. The report further says that the revision commission has been at work upon a codification of the factory acts.

State Forests.—The annual report of the State Forestry Commission shows that the practice of girdling and peeling the trees to obtain spruce bark for temporary shanties has almost entirely ceased. The reports of the trespasses committed during 1890 shows that over \$2,000 was collected by the commission in the settlement of actions for trespass. There has been a considerable decrease of the acreage of the forest preserve in the Adirondacks through the cancellation and redemption of the State's title through the State Comptroller's office, this decrease during 1888-'90 amounting to 30,000 acres.

The financial statement of the commission shows an unexpended balance of \$6,000 at the close of the fiscal year. The commission, having finished the work of examining lands for the proposed State park, were able to put their foresters at work upon the examination of lands offered for sale under the law of last year authorizing the purchase of lands suitable for a State park. This act appropriated \$25,000.

Over 2,000 acres in Essex and Warren Counties have already been selected, and which will be acquired upon being accepted by the commissioners of the land office. After the law first went into effect the lands offered the commission were either held at a higher price than that allowed by the law, or else were outside of the proposed lines for a State park. The report states that the lack of foresters to make examinations was an additional reason for not carrying out earlier the provisions of last year's law.

Arbitration and Mediation.—This board consists of three members, as follows: William

Purcell, Gilbert Robertson, Jr., and Florence F. Donovan. In their annual report for the year ending Nov. 1, 1890, they say that in the cigar-making industry upward of 100 strikes occurred, most of which were confined to the metropolitan district, and in every case the question of wages was the principal subject of dispute. Toward the end of June, 1890, the cigar-makers of Binghamton demanded an advance in the prices paid for rolling and bunch-making, and upon this demand being refused a strike ensued in 15 of the largest factories in that city.

On May 31, 1890, the workmen of the P. Cox Shoe Company, of Rochester, went on strike, after presenting certain demands in writing, to which the company made written reply, offering to adjust all differences except that in reference to the method of using certain machinery. In November the proprietors of 19 of the principal shoe factories of Rochester entered into an agreement to dismiss from their employ all members of the Boot and Shoe Workers' International Union until the strike against the P. Cox Shoe Company should be abandoned and the right should be conceded to all employers to operate machinery in such manner as they might elect. On Dec. 1 this lockout commenced, and in the following week the board made formal inquiry into the causes of the controversy. This investigation and subsequent attempts to settle the dispute developed the fact that the parties to the controversy could easily have adjusted the differences which led to the strike, and the only obstacle to a settlement was the question of the disposition to be made of the former workmen of the P. Cox Shoe Company and those who took their places.

The most important strike of the year was that upon the New York Central and Hudson River Railroad, investigation of which was made and special report sent to the Legislature soon after the commencement of the session.

Political.—The Republican State Convention met in Rochester on Sept. 9. The platform approved the legislation of the Fifty-first Congress, the administration of President Harrison, and the policy of the Secretary of the Navy. The McKinley tariff, including reciprocity, was mentioned at length with approval. It was resolved that "every dollar issued by the Government, whether paper or coin, should be as good as every other dollar." The Union veterans of the civil war were thanked; the speedy construction of the Nicaragua Canal was commended; the vigorous enforcement of the United States alien contract law was urged; the amendment of the ballot law by substituting the blanket ballot was approved; and the financial policy of the Republicans in the previous Legislature was declared sound. The following nominations were made: For Governor, J. Sloat Fassett; Lieutenant-Governor, John W. Vrooman; Secretary of State, Eugene F. O'Connor; Comptroller, Arthur C. Wade; Treasurer, Ira M. Hedges; Attorney-General, William A. Sutherland; Engineer and Surveyor, Verplanck Colvin.

The Democratic State Convention met in Saratoga on Sept. 16. The platform pledged fidelity to the national Democratic platforms of 1884 and 1888. It declared "against the coinage of a silver dollar which is not of the intrinsic value

of any other dollar of the United States." The Sherman silver law was denounced. The McKinley tariff was termed a "humbug." Credit was claimed for reducing State taxation to a lower rate than it had reached in many years. It was declared that a State census should be taken; that a congressional apportionment should be made; and that a constitutional convention should be held. The Republican party was blamed for not passing these three measures. An extension of electoral reform was demanded, and a revision of the tax laws, so that personal property could be reached. The following were the nominations: For Governor, Roswell P. Flower; Lieutenant-Governor, William F. Sheehan; Secretary of State, Frank Rice; Comptroller, Frank Campbell; Attorney-General, Simon W. Rosendale; Treasurer, Elliot Danforth; State Engineer, Martin Schenck.

The Prohibitionists met in Albany, also in September, and nominated a full State ticket. John W. Bruce was the candidate for Governor.

The Socialist party nominated Daniel de Leon for the same office.

The election for Governor resulted: Flower (Democrat), 582,893; Fassett (Republican), 534,956; Bruce (Prohibitionist), 30,353; De Leon (Socialist), 14,651. Flower's majority over Fassett, 47,937. For Lieutenant-Governor, Sheehan (Democrat) had 34,419 over Vrooman (Republican). The five Democratic candidates for State offices had majorities averaging 43,000. The election of 1890 gave the Democrats a majority of 8 out of a total of 128 in the Assembly. In the Senate, which held over from the year before, the Republicans had a majority of six. The net Democratic majority of two on joint ballot was used by them in January, 1891, in electing David B. Hill as United States Senator to succeed William M. Evarts.

After the election of November, 1891, it was apparent that both Houses of the Legislature were very close. The official count for the Assembly gave the Democrats 67 and the Republicans 61. The Democrats, therefore, had one less in the Legislature of 1892 than they had in the Legislature of 1891, and the Republicans one more. In the Senate the results of the election of 1891 could not be determined without the aid of the courts. The outgoing Senate had 19 Republicans and 13 Democrats; the incoming Senate had 28 members whose election was certain. Four of the districts, with their chief centers of population at Troy, Syracuse, Hornellsville, and Poughkeepsie, respectively, were in doubt. On the face of the returns the Republicans had the advantage; but the returns were disputed by the Democrats. In the Troy district the claim was made that certain minor features of the ballot-reform law had not been complied with. In the Syracuse district the claim was made that in nine election districts ballots were voted which had the indorsement of other districts than those to which they belonged, and that 1,218 votes cast for the Republican candidate should be thrown out. In the Hornellsville district it was claimed that the Republican candidate was ineligible under the State Constitution, because he held an office in the city of Hornellsville, and that his majority of 1,762 votes in the district was void. The situation in the Pough-

keepsie district was more complicated. On the face of the returns the Republican candidate, who died before the matter was settled, had a small majority. But it was claimed by the Democrats that 32 ballots cast for him in one of the towns of Dutchess County came within the meaning of the law relating to marked ballots, because a printer's "quad" appeared upon them. The Democrats asserted that the quad-marked ballots were voted by design; and the Republicans that it was only an accident. The county board of canvassers threw out the ballots and elected the Democratic candidate. The Republican clerk of the county refused to certify the returns, and they were certified by a temporary clerk, named Mylod, elected by the board. The certificate thus signed was sent to the Secretary of State; and the county clerk was promptly removed by Gov. Hill. In the mean time there had been so many orders and counter-orders by Supreme Court justices, both in General Term and in Special Sessions, that the whole situation in regard to the four seats had become hopelessly tangled. Both sides, therefore, agreed to refer the four cases to the highest court in the State, the Court of Appeals, and to abide by the result. While the court was still considering the cases, one of the justices of the Supreme Court ordered that the quad-marked ballots in the Poughkeepsie district should be counted for the Republican, and a certificate to that effect be forwarded to the Secretary of State. The county clerk obeyed the instructions of the court; but after mailing the certificate he received an order from another justice countermanding the order of the first justice. He then followed the returns to Albany and took them out of the mail before they had reached the proper officials. This left the State board of canvassers with but one return before them—that certified to by the Dutchess County board (called the Mylod certificate), and electing the Democratic Senator from the Poughkeepsie district. On Dec. 29 the Court of Appeals decided that the Democrat had no case in the Troy district, and that the Republican should be seated. In the Syracuse district the decision was that the ballots with the wrong indorsements should be thrown out, thus electing the Democrat. This made the Senate stand 15 Republicans and 15 Democrats. In the Hornellsville district the court decided that the Republican candidate was ineligible, but it did not decide that the Democrat had been elected. The inference drawn by some was that a new election should be held; and yet the wording of the opinion by the court was so ambiguous as to leave a doubt in the mind of every one. In the case of the Poughkeepsie district the court declared that the form of the certificate signed by the temporary clerk of the Dutchess County board, and electing the Democrat, was legal; but the opinion was also worded so doubtfully as to make the Republicans think that, while the form of the certificate might be legal, yet the matter contained in it was not legal, and that the quad-marked ballots should not have been thrown out. On the other hand, the Democrats claimed that, as the State board had but one certificate before it, there could be no way but to count that certificate. The State board of

canvassers, composed of five Democrats, therefore met at once and canvassed the returns, counting this certificate from Dutchess County. The result was that when the Senate met, on Jan. 6, there were 16 Democrats and 15 Republicans, with the Hornellsville district vacant. The Democrats asserted their right, given by the Constitution, that the Senate should be the judge of the qualifications of its own members; and by a vote of 16, against the 15 Republicans, declared the Democrat from the Hornellsville district entitled to his seat. This gave the Democrats 17 votes in the Senate of 1892-'93, and the Republicans 15.

NEW YORK CITY. Government.—The city officials who held office during the year were: Mayor, Hugh J. Grant; President of the Board of Aldermen, John H. V. Arnold; Register, Frank T. Fitzgerald; Sheriff, John J. Gorman, all of whom are Tammany Democrats and entered on the duties of their special offices on Jan. 1, 1891.

Finances.—The condition of the city debt on Jan. 1, 1892, was as follows:

of January and continue each month thereafter, while the moneys to meet such obligations are not collectable until autumn, and the result is that the city is compelled to provide itself with funds for the maintenance of the city government and for the payment of its annual charges by borrowing large sums of money, which approached \$20,000,000 last year, on revenue bonds, which are redeemed when the taxes are collected.

The appropriation for current expenses for 1891 was \$35,992,891.22. Of this, \$33,764,304 was raised by taxation. The tax rate for the year was 1.90 per cent. This is a lower rate than the citizens have had before since 1860.

As the tax books were not opened for the collection of taxes for the year 1891 until Oct. 5, the current expenses of this city were necessarily paid from the proceeds of revenue bonds issued in anticipation of taxes. The amount of such bonds issued in 1891 was \$19,680,150, at a cost for interest of \$240,819.42. The condition of the money market has been such that the aver-

FUNDED DEBT.	Outstanding			
	Dec. 31, 1890.	Issued during 1890.	Redeemed during 1890.	Outstanding Dec. 31, 1891.
1. Payable from the sinking fund, under ordinances of the Common Council.....	\$4,263,000 00	.....	\$500 00	\$4,267,260 00
2. Payable from the sinking fund, under provisions of chapter 383, section 6, Laws of 1873, and section 176, New York City Consolidation act of 1882.....	9,700,000 00	.....	.....	9,700,000 00
3. Payable from the sinking fund, under provisions of chapter 383, section 8, Laws of 1878, and section 192, New York City Consolidation act of 1882, as amended by chapter 178, Laws of 1889.....	33,031,080 53	\$5,697,346 85	1,154,500 00	37,633,927 88
4. Payable from the sinking fund, under provisions of chapter 79, Laws of 1880.....	9,747,000 00	85,000 00	.....	9,732,000 00
5. Payable from the sinking fund, under provisions of the constitutional amendment adopted Nov. 4, 1884.....	25,875,000 00	1,225,000 00	.....	26,600,000 00
6. Payable from taxation, under provisions of chapter 490, Laws of 1888.....	445,000 00	.....	.....	445,000 00
7. Payable from taxation, under the several statutes authorizing their issue.....	58,974,942 85	.....	2,471,200 00	56,503,742 25
8. Bonds issued for local improvements after June 9, 1880.....	4,173,000 00	625,000 00	.....	4,798,000 00
9. Debt of the annexed territory of Westchester County.....	597,000 00	.....	28,000 00	569,000 00
Total funded debt.....	\$146,371,022 88	\$7,582,346 85	\$3,654,500 00	\$150,298,869 73
TEMPORARY DEBT.—Revenue Bonds.				
1. Issued under special laws.....	207,188 00	27,000 00	207,188 00	27,000 00
2. Issued in anticipation of taxes of 1891.....	.....	19,680,150 00	19,672,550 00	7,600 00
Total amounts.....	\$146,578,210 88	\$27,289,406 85	\$23,584,288 00	\$150,833,400 73

Total funded debt..... \$150,298,869 73
 Less amount held by commissioner of the sinking fund as investments..... \$45,619,563 94
 Cash..... 7,168,566 80

52,769,430 63
 Net funded debt, Dec. 31, 1891..... \$97,515,488 90
 Revenue bonds issued in anticipation of taxes of 1891..... (1891) 7,600 00
 (1892) 27,000 00
 Debt, including revenue bonds..... \$97,550,083 90

Notwithstanding the fact that bonds to the extent of \$7,582,346.85 have been issued for permanent improvements during the year, the net debt of the city shows a decrease at the close of the year 1891 of \$514,379.30. The taxes payable in this city in the autumn of each year are for meeting the expenses of the city government for the year in which they are imposed. The obligations which the city is required to meet for its general expenditures begin with the month

age rate of interest paid on these bonds during the past year has been nearly $\frac{1}{2}$ per cent. higher than during the year 1890.

There is a rebate at the rate of 6 per cent. a year allowed on all taxes paid prior to Dec. 1. This rebate for the year 1891 was \$173,679.91.

The Receiver of Taxes collected \$30,698,245.88 and the Clerk of Arrears \$2,015,460.26; total, \$32,713,706.14. The discount on taxes paid prior to Nov. 1 was \$173,679.91, and the interest collected on delinquent taxes \$356,286.16.

Board of Estimate and Apportionment.—This body, consisting of the Mayor, the Comptroller, the President of the Board of Aldermen, and the President of the Department of Taxes and Assessments, allowed the following amounts for 1892:

Mayoralty, \$28,000; Common Council, \$76,800; Finance Department, \$300,200; State taxes, \$2,398,504.91; interest on city debt, \$5,151,770.94; redemption of principal of city debt,

\$1,190,428.36; rents, \$126,625; armories and drill rooms—rents, \$39,050; armories and drill rooms—wages, \$49,776; judgments, \$750,000; Law Department, \$213,500; Department of Public Works, \$3,148,770; Department of Public Parks, \$1,003,150; Department of Street Improvements, Twenty-third and Twenty-fourth Wards, \$310,200; Department of Public Charities and Correction, \$2,170,125; Health Department, \$435,138; Police Department, \$5,045,468.31; Department of Street Cleaning, \$1,978,540; Fire Department, \$2,301,282; Department of Taxes and Assessments, \$120,520; Board of Education, \$4,448,355.64; College of the City of New York, \$148,000; Normal College, \$125,000; printing, stationery, and blank books, \$256,200; Municipal Service examining boards, \$25,000; coroners, \$54,700; commissioners of accounts, \$32,500; sheriff, \$120,232; register, \$130,250; Bureau of Elections, \$411,300; preservation of public records, \$45,930; fund for street and park openings, \$306,915.20; jurors' fees, \$50,000; salaries—city courts, \$383,300; salaries—judiciary, \$1,098,810; miscellaneous, \$174,147.73; charitable institutions, \$1,232,716.10; total, \$35,881,205.19. Deduct general fund, \$3,000,000. Grand total, \$32,881,205.19.

This shows that the amount allowed for 1892 is \$35,881,205.19, which is reduced by deducting the general fund made up by receipts from various sources during the year, including the unexpended balances of previous years, amounting to \$3,000,000. The total amount to be raised by taxation is \$32,881,205.19, which, as compared with the allowance made for 1891, shows a nominal reduction of about \$300,000; but as a matter of fact, the actual expenses of the city government have been increased about \$1,000,000. Of this amount, the sum of \$400,000 must be allowed to the Department of Street Cleaning, and \$200,000 additional to the Board of Education.

Wealth of the City.—By law the first Monday in July is fixed for the Common Council to receive the tax rolls. It was found that the assessed value in 1891 of the city's real estate was \$1,464,247,820, an increase of \$65,957,813 over that of 1890. The total personal estate was estimated at \$321,609,518, an increase of \$22,921,135. The total of the real and personal estate of the city was found to be \$1,785,857,338, which shows an increase of \$88,878,948. In detail the rolls are as follow:

ASSESSED VALUE, 1890.

WARDS.	Real estate.	WARDS.	Real estate.
First.....	\$88,646,162	Fourteenth....	\$26,366,892
Second.....	36,908,147	Fifteenth.....	62,984,970
Third.....	41,247,910	Sixteenth.....	41,226,285
Fourth.....	14,882,103	Seventeenth....	41,663,153
Fifth.....	48,599,290	Eighteenth....	88,599,550
Sixth.....	26,062,900	Nineteenth....	229,533,320
Seventh....	22,096,507	Twentieth....	51,850,550
Eighth....	41,138,998	Twenty-first..	98,012,350
Ninth.....	34,510,640	Twenty-second	140,591,359
Tenth.....	21,618,232	Twenty-third..	38,021,906
Eleventh....	21,074,237	Twenty-fourth.	17,640,855
Twelfth....	227,579,650		
Thirteenth..	18,888,229	Total.....	\$1,464,247,820

	Personal estate.
Resident.....	\$293,154,137
Non-resident..	14,854,931
Shareholders and banks.....	73,570,450

Total personal estate \$321,609,518

Department of Public Parks.—This bureau is under the direction of a board of four commissioners as follows: Albert Gallup, President, Waldo Hutchins, Nathan Straus, and Paul Dana. Headquarters of the board are at 51 Chambers Street.

During the year the department completed the improvement of Riverside Park from 72d to 79th Street, and partially widened and partially extended the bridle paths in Central Park. Work was also begun on the small parks on Park Avenue between 56th and 67th Streets, on the plaza at Fifth Avenue and 110th Street, and the park entrance at 106th Street and Eighth Avenue. Plans have also been prepared for the Macomb's Dam bridge. Two other events of the year were the Sunday opening of the Metropolitan Museum of Art, which proved a great success.

At the Metropolitan Museum 170,000 persons visited the collection from May till the close of the year, showing an average attendance of 6,000 each Sunday, while on week days the average was over 700 persons. On Oct. 1 the Washington Bridge passed into the control of the Park Board, which then appropriated \$6,000 to pay the salaries of those who have been holding over under the commission.

During the summer months free concerts were given in the parks in different portions of the city, there having been one every night in one park or another. A large number of settees have been added to Central Park and Riverside Drive, and the driveways and bridle paths in Central Park have been increased and improved.

An entrance to Central Park is being erected at 106th Street and Eighth Avenue. The department engineer has prepared plans for the bridge over the Harlem river, which is to replace McComb's Dam Bridge. The cost will be \$1,250,000.

At a meeting of the Park Board on Dec. 30 it was decided to grant the petition of the Naval Reserve and allow the battalion to use Castle Garden as an armory. This arrangement is not to be permanent, and it is expressly stipulated that it is to continue only until the permanent use of the building is decided upon.

Surrogate's Court (Rastus S. Ransom, Surrogate).—During the year the surrogate heard 2,873 motions and wrote 2,303 decisions. He listened to 220 will contests, admitted 1,446 wills to probate and rejected 11, and has but 13 contested will cases at present unfinished. In all, 1,600 wills were offered for probate during the year. Letters of administration to the number of 2,871 were granted, and 1,485 documents were filed. He signed 13,970 orders and decrees, and clerks in his office recorded 217,188 folios. He issued 570 orders on compulsory accountings. The sum of \$693,785 was certified to the Comptroller as being the amount of collateral inheritance tax upon estates as assessed and fixed.

Judiciary.—In the Supreme Court (Presiding Justice, Charles H. Van Brunt; Associate Justices, George P. Andrews, George C. Barrett, George L. Ingraham, Abraham R. Lawrence, Morgan J. O'Brien, and Edward Patterson) about 1,400 cases were tried by juries, and 1,202 at Special Term. There were 155 divorces granted. More cases are left on the calendar to

be disposed of this year than ever before in the history of this court. In the General Term of the Superior Court 207 cases were disposed of, and in the Special Term 297. In the latter there were 595 jury trials, 15,928 decisions, and 13,526 orders filed. There were naturalized 9,068 persons.

At the General Term of the Court of Common Pleas (Judges, Chief, John Sedgwick, P. Henry Dugro, Henry A. Gildersleeve, John J. Freedman, David McAdam, and Charles H. Truax) 370 appeals were disposed of and 150 opinions were written. At the Trial Terms 561 cases were disposed of. There were 177 schedules filed in assignment matters, showing liabilities of \$12,590,104.69, nominal assets of \$17,354,912.78, and actual assets of \$3,260,374.14.

In the City Court (Judges, Simon M. Ehrlick, James M. Fitzsimons, John H. McCarthy, Henry P. McGown, Joseph E. Newberger, and Robert A. Van Wyck) General Term, 207 cases were disposed of, and 1,875 cases were disposed of at the Trial Terms. There were 9,606 judgment rolls entered, amounting to \$6,000,000.

In the United States District Attorney's office (Edward Mitchell) and the United States Circuit Court (Judges, E. Henry Lacombe, William J. Wallace) more work was accomplished last year than in any previous year. There were brought before United States Commissioners John A. Shields and Samuel M. Hitchcock 535 cases of a criminal nature, and 11 before United States Commissioner Samuel H. Lyman. Some 74 indictments were found and 62 cases were tried and disposed of, and there were 1,470 customs cases litigated. In the United States Circuit Court 391 new cases were brought in common law, and 1,856 were tried and disposed of. In the Equity Department 189 were heard. There were 529 appeals from the Board of General Appraisers filed, and 1,402 motions were heard and passed upon by the various judges in the circuit.

District Attorney's Office (office, 32 Chambers Street. District Attorney, De Lancy Nicoll).—The annual report of the District Attorney of the county shows that in 1891 the volume of business was greater, and that more cases were disposed of, than ever before. The Grand Jury received and acted upon 4,204 cases, as compared with 3,942 in 1890.

An analysis of the cases received and disposed of shows that numerically the crime of larceny stands first, 1,401 complaints therefor having been received and 828 were convicted; 539 persons were charged with assault and 199 convicted; 517 with burglary, of which number 477 were convicted; 136 with robbery; 83 with forgery; 55 with homicide, out of which number 27 were convicted; 3 for murder in the first degree; 2 for murder in the second degree; and the remainder for manslaughter.

The Grand Jury dismissed 1,182 cases, and of the remainder 2,056 upon arraignment for trial pleaded guilty, or were convicted, 401 were acquitted, 533 indictments for various misdemeanors were discharged or sent to the Court of Special Sessions, thus making the total number actually disposed of and cleared from the dockets of the General Sessions amount to 4,172 cases. The following shows the number of cases dis-

posed of during the past year as compared with previous years: 1891, 4,172; 1890, 3,942; 1889, 3,928.

More money was turned into the city treasury from forfeited bail bonds than ever before, the aggregate being \$22,400.

Police.—This department is under the supervision of four commissioners, who are appointed for a term of six years each by the Mayor. They are Charles F. MacLean, President; James J. Martin, John McClave, and John R. Voorhis. The Superintendent is William Murray, and the headquarters are at 800 Mulberry Street.

The force on Jan. 1, 1892, consisted of a superintendent, a chief inspector, 3 inspectors, 15 surgeons, 34 captains, 155 sergeants, 40 detective sergeants, 164 roundsmen, 3,146 patrolmen, 75 doormen, and 13 on probation, a total of 3,654, an increase of 111 over 1890. During the year 44 members of the force died, 44 were retired, 29 were dismissed, and 21 resigned.

There were 89,920 arrests, as against 84,556 during 1890. Of this number, 70,911 were males and 19,019 were females. The principal crimes and misdemeanors for which the arrests were made are as follow: Intoxication, 26,009; disorderly conduct, 15,366; violation of corporation ordinances, 6,778; felonious assault, 5,263; suspicious persons, 4,094; violation of excise law, 3,428; petit larceny, 3,330; vagrancy, 1,923; and grand larceny, 1,806.

The police stations furnished lodgings for 157,275 homeless persons, of whom 68,923 were females. At the Bureau of Information over 6,000 persons called for assistance. There were 710 letters received, of which 489 were answered. The bureau received and cared for 3,128 lost children, of whom 1,071 were girls and included 36 colored waifs. Besides these, 105 female and 96 male foundlings were cared for and turned over to the Department of Charities and Correction.

There were 77 runaway children captured by the police and returned to their families or relatives. Of missing people, 142 were reported, all but 8 of whom were heard from. At the morgue 201 unknown dead, including 21 females, were reported, 92 of the bodies having been identified.

The property clerk received 2,088 different lots of stolen or unclaimed property, and delivered 772 lots, aggregating in value \$103,994.16. The different police stations during the year delivered \$959,794 worth of property which had fallen into the hands of the police, and was claimed before it could reach the property clerk. The superintendent issued 566 permits to carry pistols, 1,179 permits for parades, 268 ball permits, and 246 permits for funerals. The Telegraph Department required the services of two or three extra operators the year round. About 351,000 messages were sent and received during the year, of which over two hundred thousand were general alarms.

During the year there have been employed matrons in two station houses, at Oak and Elizabeth Streets. These appointments were made simply as an experiment, and the Police Board is watching the result of their work with the closest scrutiny. The station house on West 68th Street was completed during the year, and is ready for occupancy.

Public Works.—This department of the city government is under the charge of a commissioner appointed by the Mayor, independent of the Board of Aldermen, for a term of four years. The present incumbent is Thomas F. Gilroy, with headquarters at 31 Chambers Street. There are nine sub-bureaus, as follow: 1, for laying water pipes, constructing sewers, walls, and hydrants, paving streets, etc. (William H. Burke, water purveyor); 2, for the collection of revenue from the sale and use of water (Joseph Riley, water registrar); 3, for the care of all property connected with the supply of Croton water (chief engineer, George W. Birdsall); 4, for grading, flagging, curbing, and guttering the streets (William M. Dean, superintendent); 5, for lamps and gas (Stephen McCormick, superintendent); 6, for streets and roads (John B. Shea, superintendent); 7, for repairs of and supplies to, etc. (William G. Bergen, superintendent); 8, for the removal of incumbrances (Michael T. Cummings, superintendent); 9, for the care of sewers (Horace Loomis, engineer).

The annual report of this department shows that in extending and improving the means for the distribution of water 17 miles of mains, with 151 stopcocks and 163 fire hydrants, have been placed, making now a total of 684.71 miles of water mains, with 7,101 stopcocks and 8,739 fire hydrants. There have been placed 1,568 new water meters, making a total of 23,640 now in use. The revenue paid into the city treasury for water rents, penalties, and permits to tap water mains amounted to \$2,923,513.46.

The new aqueduct was transferred by the aqueduct commissioners to the care and custody of the department on June 30, and a statement issued by the aqueduct commissioners showed that the total cost of the aqueduct up to and including Dec. 31, 1891, was \$25,309,990.95. Of this sum, there were paid out on vouchers, pay rolls, etc., \$2,967,050.88; on contracts, agreements, etc., \$20,690,099.03; for land and land damages, \$57,869.82; expenses of commissioners of appraisal, \$2,098,362.70. The city began to receive water through the new aqueduct on July 15, 1890, beginning at the rate of about 35,000,000 gallons a day, which by Jan. 1, 1891, increased to 60,000,000 gallons a day. The supply through the old aqueduct, was reduced from the maximum capacity of 98,000,000 gallons a day to 75,000,000 gallons a day, making the daily total supply to the city, with the 10,000,000 gallons a day received through the Bronx river conduit, 145,000,000 gallons. During the year this was gradually increased to 164,000,000 gallons a day, of which 150,000,000 came through the two aqueducts and 14,000,000 gallons through the Bronx river conduit. It is evident that, with even the ordinary rainfall in quantity and in its distribution over an entire year, much larger storage capacity is required in the Croton watershed for a daily supply of 150,000,000 than for one of 98,000,000 gallons. The average annual rainfall in the Croton watershed, according to the records of more than forty years, is about 43 inches. During 1891 the rainfall was only 36.03 inches, or more than 18 per cent. below the average. The consequence was that 14,700,000,000 gallons of water had to be drawn from the storage reservoirs, lakes, and ponds, and from

Nov. 5 to 24, on account of the depletion of the stored water, the supply through the two aqueducts had to be reduced to 100,000,000 gallons a day, since which time the recent rainfalls have enabled the department to gradually increase it to 125,000,000 gallons a day.

By next summer the available storage capacity will be increased about 4,500,000,000 gallons by the completion of the double Sodom reservoir, and about two years thereafter the three other storage reservoirs now in course of construction will be completed, adding 22,000,000,000 gallons to the storage capacity, and making the entire storage capacity 39,200,000,000.

The quantities of work done in regulating, grading, curbing, and flagging streets during the year included: 170,912 cubic yards earth placed in embankments; 64,878 cubic yards rock excavated; 33,350 cubic yards earth excavated; 27,029 lineal feet new curbstones set; 8,354 lineal feet curb reset; 193,534 square feet new flagging laid; 31,640 square feet old flagging relaid; 9,767 lineal feet picket fence built.

During the year 1,118 new gas lamps and 103 electric lamps were placed and lighted on 15½ miles of new streets. There are now 27,080 gas lamps and 1,196 electric lamps in use, lighting 525 miles of streets, 2½ miles of piers and bridges, and 89 acres of public parks and places. There are 1,307 miles of gas mains in the streets of the city.

In the care and repair of macadam roadways 70,172 square yards of new macadam superstructure were laid on Seventh Avenue, from 110th to 145th Street; 103,662 square yards of roadways were resurfaced with gravel, and 3,273 truck loads of surface material were used in the work done by the Maintenance Department in addition to that done by contract. New pavements have been laid as follow:

GRANITE AND TRAP BLOCKS.		Sq. yds.
On new streets, payable by assessments.....		54,161
Repavements within land grants.....		70,711
Repavements under \$1,000,000 appropriation.....		160,765
Repavements under annual appropriation.....		80,010
Total.....		365,647
ASPHALT.		Sq. yds.
On new streets, payable by assessments.....		9,488
Repavements within land grants.....		3,801
Repavements under \$1,000,000 appropriation.....		183,033
Repavements under annual appropriation.....		4,285
Total.....		156,112
Grand total new pavements laid.....		515,759

The following is the present mileage of paved streets on Manhattan Island: Cobbles, 3-34 miles; specification stone block, 197-25; square stone blocks, 122-09; macadam, 24-24; asphalt, 24-89; total, 371-75.

There have been constructed and laid in the streets: Gas mains, 41-89 miles; electrical subways and conduits, 35-68; single horse-car tracks, 10-10; single-track cable rails on Third Avenue (completed), 7; single-track cable rails on Third Avenue (uncompleted), 4-50; single-track cable rails on Broadway (completed and paved), 9-80; steam and salt-water pipes, 0-81.

The contract for the Criminal Court building calls for its completion in five hundred working days, of which four hundred and thirty-one have been consumed. The average

height of the building on its four street fronts is to be 112 feet from the street level to the parapet; the Elm Street front is to be built within 49 feet of this height, the Franklin Street front to within 75 feet of the parapet, the White Street front to from 57 to 65 feet below the parapet and the Center Street front to within 75 feet of the parapet. There are 19 interior partition walls, all of which are within 46 feet of the roof. Two of the four stories of the marble interior arcade are built. The iron work, heating apparatus, and plumbing are advanced to the full extent possible with the progress on the mason work. With an adequate force of workmen the building can be put under roof in sixty-four days. The construction of the new Harlem court-house is progressing favorably. The fifteen free floating baths were thoroughly repaired and equipped in the spring and placed in their respective summer berths in June. The total attendance for the bathing season of 1891 was 2,350,362 males and 1,081,967 females. The operations of the Bureau of Encumbrances are summarized as follow: Complaints of obstructions received and attended to, 4,242; seizures and removals of obstructions made, 4,054; cartloads of refuse material removed from the streets, 597; dead and dangerous shade trees removed, 639; telegraph poles removed, 1,537; miles of telegraph wire removed, 2,232; permits issued to place building material on streets, 7,276; miscellaneous permits 1,026.

Sewerage was extended into new streets by the construction of 7.35 miles of new sewers, with 66 receiving basins, and 1.52 miles of new sewers were built in place of old and defective ones. The sewerage system on Manhattan Island now includes 445.24 miles of sewers, with 5,314 receiving basins. In the maintenance of this system, 162,305 miles of sewers and 4,387 receiving basins were cleaned.

A summary of contracts shows that during the year there were made:

	Estimated cost.
56 sewer contracts	\$311,468 16
77 regulating and grading	278,812 99
44 paving	1,681,870 06
74 miscellaneous	540,004 84
384 contracts. Total cost	\$2,798,125 73

Dock Department.—There are three commissioners, as follow: President, Edwin A. Post; Treasurer, James Matthews; and J. Sergeant Cram. The office of this department is at Pier A, North river. During the year 9 new piers were built on the North river and 5 on the East river. Of those on the North river, 10 piers were extended to the new pier-head line. On the North river 600 feet of masonry sea-wall were built and 1,400 feet on the East river, and 1,200 feet of crib bulk-head were constructed in the upper part of the island. A total of new wharfage front was thus provided of more than two and a half miles, equaling over 10 per cent. of the entire dock frontage of the city of Liverpool. The receipts of the department were over \$1,650,000, the largest of any year in its history.

The city's water-front property is now substantially all improved, but private owners, with their limited holdings, are unwilling or unable to properly improve their dock property. It is recommended as a measure of economy in the use of the water-fronts, and for the advantage of

the commerce of this port, that the city should, under the powers conferred by law, acquire the whole North river water-front as far as 58th Street and that of the East river as far as Grand Street. Improvements on a comprehensive plan, with a continuous sea-wall and piers at proper intervals and of sufficient length, could then be made, thus meeting the requirements of commerce and carrying into effect the provisions of the act of 1871.

Street Cleaning.—This department is under the control of a commissioner with his office at 187 Stewart Building, (Thomas S. Brennan, Commissioner). The appropriation for 1891 was \$1,511,250, which was an increase over that of 1890 of \$239,724, although the population showed an increase of 6 per cent., or 100,827. The appropriation was used as follows: Administration, \$124,000; sweeping, \$377,000; carting, \$616,000; snow and ice, \$40,000; final disposition, \$292,000; new stock, \$50,000; rentals and contingencies, \$13,250.

The work accomplished by the department and the cost were as follow: Swept, 56,528.68 miles of streets, cost \$5.09 a mile; carted, 1,450,741 loads, cost 37 cents a load; and final disposition, 1,659,415 loads, at 15 cents a yard.

The refuse was disposed of by dumping 831,027 loads at sea, 736,756 loads behind bulkheads, and filling in lots with 119,844 loads.

Vital Statistics.—The Board of Health consists of the President of the Board of Police, the health officer of the port, and two commissioners, one of whom must have been for five years a practicing physician. The commissioner who is not a physician is the president of the board. The commissioners are as follow: President Charles G. Wilson, Dr. Joseph D. Bryant, Health-Officer William M. Smith, and President of the Board of Police Charles F. MacLean. The headquarters of the Board of Health is at 301 Mott Street. During 1891 the vital statistics were as follow:

ITEMS.	1891.	1890.
Deaths under one year	11,244	10,251
Deaths under five years	18,225	16,549
Total deaths	49,054	46,290
Total reported births	46,594	39,250
Total reported marriages	15,764	14,992
Total reported still-births	3,414	3,315
Death rate per 1,000 living	25.96	24.66

The principal causes of death were as follow: Phthisis, 5,160; pneumonia, 5,817; diarrheal diseases, 3,585; Bright's disease and nephritis, 2,503; heart disease, 2,287; bronchitis, 1,834; violence, 1,957; diphtheria, 1,363; scarlet fever, 1,221; influenza, 838; measles, 664; croup, 605; typhoid fever, 384; whooping cough, 353; cerebro-spinal meningitis, 189; malarial fever, 187; smallpox, 2; and typhus fever, 1.

The Bureau of Contagious Diseases (Cyrus Edson, chief) report that during the year 25,189 cases were attended by sanitary inspectors. This number included 9 typhus fever, 1,320 typhoid fever, 7,218 scarlet fever, 11,863 measles, 4,749 diphtheria, and 21 smallpox. There were 26,128 inspections made, and 8,590 general and special reports submitted.

There were 25,243 primary vaccinations and 88,790 revaccinations performed during the year,

and 910 sick children were visited. The disinfecting corps visited 29,568 houses in which contagious diseases were reported, fumigated 27,866, and disinfected 94,588 rooms; 1,049 patients suffering from contagious disease were removed to hospital, and 18 dead bodies were removed to the morgue; 34,950 pieces of infected goods were removed for disinfection, 8,116 pieces were destroyed, and the rest returned to owners after disinfection. The veterinarian of the department had charge of 538 cases of contagious diseases in animals, made 1,536 inspections, and examined 34,240 head of cattle. Sixty-six glandered horses were destroyed, and 136 post-mortems on cattle were made.

The total number of orders issued by the board for the abatement of nuisances was 25,232; attorneys' notices issued for non-compliance with orders, 15,054; civil actions begun, 2,435; arrests made, 95; judgments obtained in civil courts, 288; judgments obtained in criminal courts, 224; permits issued, 4,330; persons removed from overcrowded apartments, 3,308.

The inspections by officers of the Sanitary Bureau were 664,801 (171,058 more than in 1890), as follow: By sanitary inspectors, 58,494; sanitary police, 292,701; division of contagious diseases, 26,128; plumbing and ventilation inspectors, 55,117; milk inspectors, 94,670; fruit and food inspectors, 41,606; meat and fish inspectors, 66,391; offensive trades inspectors, 29,133; assistant chemists, 21.

Night inspections of tenements to report overcrowding numbered 53,570, and 3,308 persons removed from overcrowded apartments. The inspectors of plumbing and ventilation reported 2,748 houses begun during 1891, of which 2,629 were finished, and there are at present 2,474 in process of construction. There were examined 144,870 specimens of milk offered for sale, and 1,744 quarts of adulterated milk were destroyed. There were 184 persons arrested for offering adulterated milk for sale, of whom 166 were tried and 3 were discharged. The amount collected in fines was \$4,336. As a result of the inspections by the fruit and food inspectors, 1,341,244 pounds of stuff unfit for food were condemned and seized, an increase over 1890 of 285,168 pounds. There were 2 arrests for offering this stuff for sale, and the accused were fined \$10. The meat and fish inspectors condemned and seized 1,595,497 pounds of meat and fish unfit for food, an increase of 395,156 pounds over the preceding year. Three arrests were made in this connection, and \$100 was imposed as fines. Dead animals to the number of 48,914 were removed from the streets, an increase of 6,948 over the previous year.

Law.—The work in this division is divided among four offices: (1) Corporation Counsel's office (William H. Clark). The records of this office for 1891 show that it has tried, at Circuit and Special Terms of the different courts of record, 98 suits, and 102 appeals and 760 motions were argued. The Corporation Counsel examined and approved 935 contracts entered into between the city and various contractors, wrote 399 opinions on questions submitted to him by the heads of departments, and also collected and turned into the city treasury \$301,618.88. (2) The office of the Attorney for the Collection of

Arrears of Personal Taxes (John G. H. Meyers) paid into the city treasury about \$81,000. (3) The office of the Corporation Attorney (Louis Hanneman) collected over \$12,000. (4) The Public Administrator's office (Charles E. Lydecker) paid into the city treasury \$7,606.65, commissions on intestate estates.

The money sought to be recovered in "negligence cases" from the city aggregated \$224,000, of which only \$3,785 was obtained.

Fire.—This department is under the control of a board of three commissioners, as follow: Henry D. Purroy, President, S. Howland Robbins, and Anthony Eickhoff. The headquarters of the department is at 157 East 67th Street, and the chief is Hugh Bonner.

This department includes 1,035 officers and men, 57 engine companies (including 3 floating engines), 22 hook-and-ladder companies, 91 steam fire engines, 3 fire boats, 37 hook-and-ladder trucks, and 382 horses.

During the year there were 3,925 fires, of which 3,559 were confined to point of starting; 173 fires confined to building; 56 extended to other buildings; 2,711 fires extinguished without engine stream; 814 fires extinguished with one engine stream; 400 fires extinguished with more than one engine stream; 1,252 fires resulting in nominal damage only; 762 fires, building not damaged; 635 fires, building slightly damaged; 209 fires, building considerably damaged, and 16 fires, building destroyed; estimated loss, \$6,618,517; insurance, \$77,402,837; average loss by each fire, \$1,686.24; number of fire alarms, 4,185.

The Bureau of Combustibles received for licenses, permits, and penalties \$47,430.33.

In the Bureau of Inspection of Buildings there were 1,616 applications for new buildings; 2,802 proposed new buildings; estimated cost, \$56,001,681; 2,160 applications to alter, repair, etc.; 2,385 proposed to alter, etc.; estimated cost, \$7,445,231; violations of law reported and acted upon, 1,340; buildings reported for fire-escapes, 1,793; buildings reported unsafe, 1,214; and complaints investigated, 2,946.

Of fire-alarm telegraphs there are 272 alarm boxes, 47 fire-apparatus houses, 13 school-houses, and 6 hospitals which are connected by underground telegraph through the city subways and subsidiary conduits by means of 59½ miles of cable, having 577 miles of conductors. During 1891 915 telegraph poles and 67 miles of wire were taken down.

The Chief of the Bureau of Boiler Inspectors reports making 6,471 inspections; 6,381 tests of boilers, of which 40 were condemned. There were 6,651 engineers examined during the year, and 5,942 certificates were granted.

Education.—The board having control of this subject consists of 21 commissioners, who are appointed by the Mayor. The president is John L. N. Hunt and the city superintendent is John Jasper. The number of schools and departments is now upward of 306, including a nautical school, in which there were registered on Sept. 30 59,199 pupils in the grammar departments and 113,887 pupils in the primary departments. At that time 6 new schools were in course of construction, and would be opened during the coming year, affording accommodation for 8,000 pupils. There were refused 395 grammar pupils and 4,747 pri-

mary pupils owing to lack of room, but more than one third of these subsequently found accommodation.

It was proposed that the office of Counsel to the Board of Education be abolished, the Board of Estimate deciding that all legal matters upon which the Board of Education needed advice could be attended to by the Corporation Counsel, but this action failed to go into effect.

Rapid Transit.—A Board of Rapid Transit Railroad Commissioners for the City of New York, consisting of William Steinway, John H. Starin, Samuel Spencer, John H. Inman, and Eugene L. Bushe, appointed by the provisions of chapter iv of the Laws of 1891, to determine upon a general plan of construction of a rapid-transit railway to be established in this city, reported to the Common Council on Oct. 20, 1891, that a decision favoring an underground and viaduct railway was reached, and a route, as follow: The center line recommended to begin at a point under the westerly side of Whitehall Street, distant along the same 62.5 feet north from the northerly line of South Street produced; thence by diverging lines under Whitehall Street and Battery Park and State Street, respectively, forming a loop line, the tracks converging to parallelism at a point under Broadway between Bowling Green and Morris Street; thence under Broadway and Union Square to 59th Street; thence under the Boulevard to 121st Street; thence by viaduct to 134th Street; thence under the Boulevard to the south line of 156th Street; thence by viaduct to the north line of 159th Street; thence under the Boulevard to 169th Street; thence under Eleventh Avenue to a point 1,460 feet north of the center line of 190th Street; thence by a viaduct on the same straight line produced to a point 442 feet north from the intersection of said straight line with the center line of the King's Bridge Road; thence to the right on a curve with a radius of 1,910 feet and a tunnel a distance of 860.6 feet; thence by tangent 138 feet; thence by curve to the left with a radius of 1,910 feet, a distance of 350 feet in tunnel and a distance of 510.6 feet by viaduct, to a point on a line coincident with the center line of Audubon Avenue produced and distant 425 feet north from the center line of 217th Street; thence by viaduct and on a tangent coincident with the center line of Audubon Avenue produced across the Government ship canal, and thence by the same tangent and in depressed structure 670 feet; thence on the same tangent and by viaduct to and across Spuyten Duyvil Creek; and thence on the same tangent by viaduct, depressed structure, and tunnel, as the contour of the lands may require, to a point 100 feet north of the center line of Delafield Lane; thence to the left on a curve with a radius of 1,910 feet to a point 80 feet south from the center line of Delafield's old lane; thence by a tangent to a point 112.4 feet south from the south line of Rock Street; thence to the right by a curve with a radius of 500 feet for a distance of 220.8 feet to a point in the center line of Forest Street 112.4 feet north of the south line of Rock Street; thence by tangent coincident with the center line of Forest Street to the city limits. Also, a loop from Broadway, under Mail Street, City Hall Park, Park Row, and Chambers Street,

and again connecting with the Broadway line. Also, a route, the center line diverging from the Broadway line at or near 14th Street, running under Union Square to Fourth Avenue; thence under Fourth and Park Avenues to a point 112.15 feet north from the north line of 40th Street; thence to the left on a curve with a radius of 250 feet for a distance of 154.55 feet; thence by tangent a distance of 292.18 feet to a point 40.1 feet north from the south line of 42d Street and 215.7 feet west from the center line of Fourth Avenue; thence to the right on a curve with a radius of 250 feet a distance of 124.23 feet; thence by tangent 46.39 feet; thence to the left on a curve with a radius of 250 feet a distance of 182.37 feet to a point 4.4 feet north from the north line of 48d Street and 159.5 feet east from the center line of Madison Avenue; thence by tangent 39.58 feet; thence to the right on a curve with a radius of 400 feet a distance of 332.28 feet to a point in the center line of Madison Avenue 65.6 feet north from the north line of 44th Street; thence under Madison Avenue to the south line of 96th Street; thence to the right on a curve with a radius of 400 feet for a distance of 240.07 feet; thence by tangent a distance of 132.98 feet; thence to the left on a curve with a radius of 400 feet a distance of 240.07 feet to the south line of 98th Street at a point distant 175 feet east from the easterly line of Madison Avenue; running thence by viaduct parallel with Madison Avenue, the center line distant 175 feet east from the easterly line thereof, across streets and private property to a point 124.6 feet north from the line of north 134th Street and distant 175 feet east from the easterly line of Madison Avenue; thence to the right on a curve with a radius of 357.15 feet a distance of 408.6 feet to a point on the west line of River Street 54 feet 11 inches south from the south line of 136th Street; thence by tangent across the Harlem river a distance of 400 feet; thence to the left on a curve to the south line of 134th Street at its intersection with the center line of Walton Avenue; thence by viaduct, depressed structure, and tunnel, as the contour of the lands may require, along the line of Walton Avenue to Stebbins Place; thence to the intersection of the center lines of Sylvan Avenue and Belmont Place; thence along the line of Sylvan Avenue to its terminus at Orchard Street; thence in a straight line to the center line of Berrian Avenue at the southerly point thereof; thence along the center line of Berrian Avenue to 1st Street; thence in a straight line to the intersection of the center lines of Kirkside Avenue and Croton Avenue; thence along Kirkside Avenue to Travers Street, and thence by straight line to and under Jerome Avenue to the north line thereof.

The general plan of construction of the loop under Battery Park, State, and Whitehall Streets shall be double track; from the Morris Street junction to near Vesey Street shall be three parallel tracks on the same level, with suitable switches and connections between them; from Vesey Street to 190th Street on the west-side line shall be four parallel tracks on the same level; and thence across the Government ship canal and Spuyten Duyvil Creek to the city limits shall be two parallel tracks on the same

level. On the east-side line from 14th Street to the Harlem River shall be four parallel tracks on the same level, and thence to the city limits shall be two parallel tracks on the same level. The tunnels shall be not less than 11 feet 6 inches in height in the clear, and 11 feet in width for each track. Whenever necessary for the proper support of the surface of the street, the roof of the tunnel shall be of iron girders with solid plate-iron covering, supported by suitable iron columns between each of the tracks and supporting walls on the outside. The roof of the tunnel shall be as near the surface of the street as the pipes and underground structures now laid therein and the street grades will permit. Viaducts shall be of masonry or iron, or both combined. The Government ship canal and the Harlem river shall be crossed by double-track drawbridges not less than 50 feet in the clear above mean high-water mark, with clear spans of not less than 125 feet between the center piers and bulkhead line. North of the Harlem river the construction shall be by viaduct, depressed structure, and tunnel, as the grades of the land upon the proposed routes shall require. The junction of the tracks near 14th Street shall be effected by dividing them around Union Square, raising one pair and depressing the other, so that trains going in opposite directions shall not cross on the same level. All station approaches shall be as far as possible through private property to be acquired for that purpose. Except that on the Boulevard, station approaches may be in the center of the street. A footway shall be provided the whole length of the line between the center tracks, and refuge niches shall be built in the side walls at proper intervals for the convenience and protection of employes. The motive power shall be electricity, or some other power not requiring combustion within the tunnel; and the motor or motors shall be capable of a uniform speed for long distances of not less than 40 miles per hour, exclusive of stops.

The manner of construction from South Ferry to about 34th Street shall be by underground tunneling without disturbing the surface of the street. In case of necessity the excavations below Beaver Street and in the neighborhood of Canal Street, and at such other special points as this commission may during the progress of the work determine, may be made by excavation from the street surface, and all excavations in Fourth Avenue above 14th Street and in all other streets and avenues above 34th Street may be made in the same manner.

The loop at Battery Park is adopted as furnishing the best and most convenient method for the terminal handling of the trains, both way and express. The 3 tracks between Bowling Green Junction and Vesey Street provide amply for the volume of traffic below the City Hall, and avoid encroachment beyond the curb line in Broadway at its narrowest points. The introduction of a loop at City Hall Park by which trains may be stopped, turned, and dispatched up town continuously, and without switching, and without grade crossings, for trains in opposite directions, furnishes the best means of a second down-town terminus at the most important point, and the best means of connecting with Brooklyn Bridge.

At Union Square, a system of tracks has been devised by which all trains on the Broadway and Madison Avenue line are accommodated at a single station, and all grade crossings between trains in opposite directions are avoided. At 96th Street the contour of the ground necessitates the termination of the tunnel. It therefore became necessary to deflect the line from Madison Avenue and occupy private property, thence to the Harlem river, on account of the prohibition in the Rapid-transit act against the use of Madison Avenue for an elevated structure.

County Clerk's Office (County Clerk, Leonard Geigerich, who held office until Dec. 11, when he was succeeded by William J. McKenna).—The following is a report of the work done in the County Clerk's office during the year:

In the law department there were: Judgments filed, final, 4,970; introductory, 36; total, 5,006; fee received, \$2,485. Notes of issue received, new cases—Circuit Term, 2,148; Special, 1,266; total, 3,414; fee received, \$10,242.

In the equity department there were issued 1,560 judgments, 1,273 reports, 14,000 special proceedings, 1,715 complaints, 2,200 orders, 260 accounts and inventories, 160 oaths, and 240 notices of claims.

In the docket department notices of 216 general assignments, 20 sheriff's sales, and 3 insolvencies were posted.

There passed through the hands of the record department for indexing 2,860 bonds and 6,290 executions, 460 mandamus and *habeas corpus* 110 inventories and accounts, 215 remittances, 130 commissions, 300 cases and exceptions, and 160 street-opening maps.

Electrical Control.—This board consists of the Mayor, Jacob Hess, and Theodore Moss. The office of the bureau is at 1266 Broadway. During the year 5,224 poles and 7,152½ miles of wire were removed and 114 miles of subways constructed. The capacity of this subway work is as follows: 47 miles for electric-light, 721 miles for telephone and telegraph, and 121 miles for Edison-light.

There are now in use in the city 1,420 miles of subways, divided as follow: Electric-light subways, 578 miles; telephone and telegraph subways, 721 miles; and Edison subways, 121 miles. There are at present 59 alternating, and 84 are circuits, making a total of 143 high-tension circuits in use in the subways, with 528 miles of electric-light conductors. There are 29,666 miles of telegraph and telephone wires and 383 miles of Edison conductors. The reports are conclusive that, from an electrical standpoint, the operation of the subways is a success.

The establishment of a municipal telegraph exchange, to connect the departments and other points between which communication is necessary and desirable, is recommended by the Mayor.

Immigration.—The care of immigrants arriving in the United States is a Federal charge, and is under the supervision of Superintendent John B. Weber. During the year the office was at the Barge Office, in Battery Park.

In 1891 430,884 immigrants were landed at the Barge Office. Of all the countries, Germany furnished the greatest number, 79,496, and Arabia the smallest, 1. The other nations sent the following number of people: Ireland, 35,951;

England, 22,820; Wales, 456; Scotland, 4,887; France, 4,189; Russia, 52,022; Poland, 27,400; Switzerland, 6,264; Sweden, 32,426; Norway, 10,500; Belgium, 2,773; Italy, 65,084; Spain, 124; Portugal, 1,985; Denmark, 9,924; Hungary, 25,409; Austria, 27,423; Bohemia, 8,074; Finland, 4,030; Armenia, 946; Australia, 15; Greece, 1,038; all other countries, 3,969.

Post-Office.—This department is a Federal office, under the jurisdiction of the Post-office Department in Washington. The postmaster is Cornelius Van Cott. The post-office building is at the junction of Broadway and Park Row, opposite Barclay Street. During the year the total number of pieces of mail matter of all kinds handled was 1,150,027,006, a daily average of 3,495,523, and an increase over the previous year of 125,828,285.

There were delivered through lock boxes and by carriers 374,724,612 pieces of ordinary mail matter, divided as follow: Letters through boxes, 63,155,774; by carriers, 187,130,572. Postal cards through boxes, 6,944,656; by carriers, 38,577,910. Other mail matter through boxes, 34,491,163; by carriers, 44,424,537. In the registered-letter department 1,520,317 pieces were delivered, and 1,393,323 of domestic and 550,703 of foreign origin were recorded and distributed to other offices. In the distribution department 771,838,051 pieces were handled, as follows: Letters of local origin, 266,715,732; received by mail, 36,535,506; foreign dispatched, 27,622,758. Postal cards of local origin, 41,033,190; received by mail, 9,133,876; foreign dispatched, 1,315,369. Other matter of local origin, 283,221,112; received by mail, 60,178,696; foreign dispatched, 46,081,812.

The ordinary mail matter handled was contained in 1,343,427 lock pouches, and 3,656,148 sacks (including foreign mail, of which 146,213 sacks were received and 179,168 dispatched), besides which there were handled 11,843 cases and 110,425 pouches of registered matter and 5,401 pouches and 45,743 sacks of supplies.

There passed through the New York Post-office in transit 260,402 pouches and 589,785 sacks of mail matter, making a total of 6,023,174 pouches, cases, and sacks handled at the office, a daily average of 18,307, exclusive of those which the 19 branch post-office stations exchanged with one another and with the general office.

The volume of money-order business was: At the general post-office 1,221,089 money orders were issued and paid, amounting to \$9,870,586.14, and 818,601 postal notes, amounting to \$1,247,183.50. At the 39 branch post-offices and sub-stations the number of orders issued and paid was 280,274, amounting to \$4,127,885.74, and the number of postal notes 138,312, amounting to \$266,744.30. The aggregate business of the money-order department for the year amounted to \$106,869,047.03, giving an increase over the previous year of \$5,534,868.75.

The total receipts of the office were \$6,505,952.08, and the total expenditures \$2,525,540.59 (including \$1,146,417.94 for free-delivery service), giving a net revenue of \$3,980,411.49.

There were sold during the year 232,132,368 postage stamps, 47,633,828 Government-stamped envelopes, and 54,945,025 postal cards.

The total weight of mails received and dispatched daily during 1891 was 335 tons.

Foreign mails dispatched averaged 35 a week. Foreign mails, both inward and outward, frequently include as many as 800 bags, and require from one to twelve two-horse trucks for their transportation.

Memorial Arch.—The committee for the erection of the Washington Arch met on Dec. 14. The treasurer reported the total subscriptions to date as \$106,672.82, of which \$105,075.82 had been paid. Of the \$1,597 remaining, about \$700 was collectible. Interest amounts to \$5,024.61, making a total of the fund \$110,100.43. On the construction of the arch there has been expended \$85,304.63, and for other expenses \$8,854.31, leaving a cash balance of \$13,941.49. The architect, Stanford White, said that the arch had been carried to a height of 63 feet 6 inches since the cornerstone was laid on Dec. 22, 1890. The frieze of the piers, the interior decorations of the arch, and the cornice have been carved, as well as nearly all of the frieze. The total cost of the arch will be \$123,000, and there will be needed \$21,003.88, \$4,000 of which the committee desired should be subscribed by Jan. 1, 1892, so that the interior work might be inclosed.

Political.—The election of 1891 was held on Nov. 3, when the following local candidates were voted for:

Tammany.—Judge of the Supreme Court, George L. Ingraham; Judge of the Superior Court, Henry A. Gildersleeve; Judge of the Court of Common Pleas, Roger A. Pryor; Judges of the City Court, Simon M. Ehrlich and John H. McCarthy; and Coroners, Ferdinand Levy, John B. Shea, and Louis W. Schultze; and 25 aldermen.

County Democracy.—This organization accepted the above-named candidates, except the following: Coroners, John Martin, William J. V. Hart, and Emil Schaerer; and 18 aldermen.

Republican.—Judge of the Supreme Court, Edward T. Bartlett; Judge of the Superior Court, Myer S. Isaacs; Judge of the Court of Common Pleas, J. Langdon Ward; Judges of the City Court, Henry Grasse and Charles G. Cronin; and Coroners, John R. Nugent, William Wainman, and George W. Kram; and 25 aldermen.

Socialist.—Judge of the Supreme Court, Rudolph Modest; Judge of the Superior Court, William Draemel; Judge of the Court of Common Pleas, Benjamin J. Gretsck; Judges of the City Courts, Henry Glyn and Henry Foth; Coroners, G. C. Striebeling, Waldorf Dorfman, and Ad. Jablinowski; and 16 aldermen.

Prohibition.—Judge of the Supreme Court, Charles E. Manierre; Judge of the Superior Court, James H. Laird; Judge of the Court of Common Pleas, Coleridge A. Hart; Judges of the City Courts, Thomas D. Stetson and Henry H. Hadley; and Coroners, J. H. Yarnall, H. D. Burnham, and W. H. Jennings. No aldermen were nominated by this party.

Of the foregoing, the Tammany candidates for judicial offices and coronership were elected by varying pluralities of upward of 30,000 votes. The Board of Aldermen chosen was as follows:

Tammany Hall, 20; Republican, 3; County Democracy, 2.

In the Tenth Congressional District an election was held to fill the vacancy caused by the death of Francis B. Spinola, and the following votes were cast: William Bourke Cockran, Democrat, 13,234; James B. Townsend, Republican, 7,160; John Hauser, Socialist, 343; Alfred L. Manierre, Prohibition, 199. Likewise in the Twelfth Congressional District an election was held to fill the vacancy caused by the resignation of Roswell P. Flower, at which the following votes were cast: Joseph J. Little, Democrat, 19,306; William McMichael, Republican, 11,465; Theodore L. De Vinne, County Democrat, 1,075; and John J. Flick, Socialist, 1,075.

Events.—On Jan. 2 the Fifth Avenue Theatre, at the corner of Broadway and 28th Street, was burned. On May 5 the music hall founded by Andrew Carnegie, at the corner of 57th Street and Seventh Avenue, was opened with appropriate exercises. On Oct. 27 the New York Court of Appeals decided the Tilden will case in favor of the natural heirs, thus ending a long controversy, and depriving New York city of the free public library originally proposed by Samuel J. Tilden. But a compromise with one of the heirs leaves \$2,000,000 in the hands of the trustees for the original purpose.

NICARAGUA, a republic in Central America. The members of both the Senate and the House of Representatives are elected by universal suffrage for four and six years respectively. Congress meets every two years. The executive power is exercised by the President with the aid of a Cabinet of five ministers. Dr. Roberto Sacasa was elected President for four years in November, 1890, and his election was confirmed by Congress on Jan. 14, 1891. His Cabinet is composed as follows: Rosendo Lopez, Minister of Foreign Relations; José del C. Bengoechea, Minister of Finance and Public Credit; Federico Marengo, Minister of the Interior; Augustin Duarte, Minister of War; Francisco J. Medina, Minister of Public Works. The regular army has 700 men and the militia 25,000. The revenue in 1888 was \$3,814,140, derived from monopolies of spirits, tobacco, and gunpowder and duties on imports and slaughtered cattle. The expenditure was \$4,024,602. There is an internal debt of \$1,592,000.

Area and Population.—Nicaragua is the largest in extent and the most sparsely populated of the five republics of Central America. With an area of 49,500 square miles, it has a population that was estimated in 1883 at only 350,000. The Cordillera, which occupies the central part of the country, rises in few places higher than 1,000 feet, and the large valley to the west of it, containing the large lakes of Nicaragua and Managua, has an average elevation of 125 feet above the plane of the ocean. Managua, the capital, has 18,000 inhabitants. There are no religious trammels, and education is fostered by the Government, which has brought in teachers from the United States and Europe. There were 251 schools, with 11,914 pupils, in 1887. The population consists of Indians, negroes, and mixed races, and a few people of European origin or descent, who have decreased in number.

Commerce and Production.—The principal occupation of the people is cattle-raising. There are about 400,000 head of cattle in the country. In recent years the cultivation of bananas for the American market has become a considerable industry. Coffee of excellent quality is also produced, and India-rubber is gathered. Cedar, Brazil wood, mahogany, and dye woods abound in the forests. Indian corn, sugar, potatoes, cacao, and indigo are cultivated. Various metals are mined to a small extent, and recently gold has been discovered. The imports consist of manufactured articles. They were valued in 1888 at \$2,146,000, of which \$766,000 represent imports from Germany; from the United States, \$395,000; from France, \$351,000; from Central America, \$268,000; from Great Britain, \$252,000; from Italy, \$42,000; from other countries, \$72,000. The exports were valued at \$1,522,000, of which \$665,000 went to Great Britain, \$334,000 to the United States, \$253,000 to Germany, and \$246,000 to France. The articles exported were coffee, rubber, woods, gums, sugar, indigo, and cacao. According to the United States revenue returns, the exports to Nicaragua from the United States amounted to \$900,813 in 1889 and \$1,270,073 in 1890, and the imports from Nicaragua into the United States were \$1,747,246 in 1889 and \$1,655,690 in 1890. The chief exports to the United States were coffee, bananas, hides, and wood, and the chief imports of American produce were iron and steel manufactures, wheat flour, furniture, and provisions.

Communications.—There is a railroad in operation between Corinto and Momotombo, 58 miles, and a separate section of the same line has been built from Managua to Granada, 32 miles. A projected railroad will connect the Pacific port of San Juan del Sur or Brito with San Jorge, on Lake Nicaragua, and another will connect Matagalpa with the eastern shore of Lake Managua. A concession has been obtained for a railroad from Matagalpa to the east coast, a distance of 90 miles.

The post-office in 1886 delivered 3,306,500 letters, papers, etc. There were 1,549 miles of telegraph in 1890, uniting the chief towns and joining the international cable at Greytown or San Juan del Norte.

The Nicaragua Canal.—A concession for a ship canal from San Juan del Norte to San Juan del Sur was granted in April, 1887, to the Nicaragua Canal Association of New York. The Maritime Canal Company was organized and incorporated by the United States Congress on Feb. 20, 1889. A construction company, of which Warner Miller is president, took the contract of building the canal. The Nicaragua Government granted one year in which to begin and ten years additional in which to complete the canal. The work of construction was begun, and in September, 1890, the Nicaragua Government formally acknowledged that the stipulated sum of \$2,000,000 had been expended within the year. The canal was expected to cost \$90,000,000, to be six years in building, and to yield a revenue of \$17,500,000 when completed, calculated on the rates of toll that are charged on the Suez Canal. (For a complete description of the work, see "Annual Cyclopædia for 1888," page 614.) An application was made to the United States Congress in Janu-

ary, 1891, to have \$100,000,000 of bonds guaranteed by the United States Government, and to have the work of construction supervised by officers of the Engineer Corps of the United States army. This arrangement was pronounced by some to be incompatible with the Clayton-Bulwer treaty with Great Britain, and other Senators voted against the bill because they were opposed to subsidies. It consequently failed to pass. The construction company had expended about \$4,000,000. There had been issued up to the close of the fiscal year stock of the par value of \$20-778,000. Cash subscriptions of \$1,041,000 had been paid in, and \$5,953,000 of bonds had been disposed of for franchises, labor, privileges, and property.

Political Disturbance.—President Sacasa is a representative of the Clerical party, which has its headquarters in his native city of Leon, the old capital, rather than of the Progressist party that has furnished all the Presidents in recent times. The rivalry between Leon, which in its decayed condition still has 25,000 inhabitants, and Granada, the center of the Progressist movement, was formerly so great that it became necessary to transfer the seat of government to a third and more unimportant town. Having served the unexpired term of President Carazos, he succeeded in getting himself elected for the next term. Since then there have been many rumors of a conspiracy to oust him by force. Acting on the information of his spies, he had ex-Presidents Joaquin Zavala and Chamorro, Gen. Enrique Guzman, Gen. J. D. Rodriguez, and Anselmo Rivas, editor of the "Diario" in Granada, the leading newspaper in Nicaragua, all suddenly arrested on Aug. 23, 1891. Their arrest caused intense excitement, and an attempt was made to rescue them. The prison was attacked, the soldiers were fired upon, and in the battle that ensued, 6 soldiers and the chief of police were killed on the Government side and more than 50 of the insurgents were shot. The prisoners were escorted over the frontier on the following day and forbidden to return on penalty of death. While they were taken to the railroad on Sept. 3, the people of Granada, on making a demonstration as though to release the prisoners, were fired on by the guards and returned the fire, killing the governor of the province, the lieutenant commanding the escort and 5 soldiers. On Oct. 12, a corporal of the palace guard named Carlos Perez made an attempt to murder President Sacasa.

NORTH CAROLINA, a Southern State, one of the original thirteen, ratified the Constitution Nov. 21, 1789; area, 52,250 square miles. The population, according to each decennial census, was 393,751 in 1790; 478,103 in 1800; 555,500 in 1810; 638,829 in 1820; 737,987 in 1830; 753,419 in 1840; 869,039 in 1850; 992,022 in 1860; 1,071,361 in 1870; 1,399,750 in 1880; and 1,617,947 in 1890. Capital, Raleigh.

Government.—The following were the State officers during the year: Governor, Daniel G. Fowle, Democrat, who died on April 7, and was succeeded by the Lieutenant-Governor, Thomas M. Holt, Democrat; Secretary of State, William L. Saunders, who died on April 2, and was succeeded by Octavius Coke; Treasurer, Donald W. Bain; Auditor, George W. Sanderlin; Attorney-General, Theodore F. Davidson; Superin-

tendent of Public Instruction, Sidney M. Finger; Commissioner of Agriculture, John Robinson; Chief Justice of the Supreme Court, Augustus S. Merrimon; Associate Justices, Walter Clark, Joseph J. Davis, James E. Shepherd, and Alphonso C. Avery.

Population by Races.—The following table shows the white and colored population of the State in 1880 and 1890, as reported by the Federal census:

COUNTIES.	WHITE.		COLORED.	
	1880.	1890.	1880.	1890.
Alamance.....	12,670	9,997	5,601	4,618
Alexander.....	8,582	7,458	818	897
Alleghany.....	6,068	4,967	738	519
Anson.....	10,489	8,790	957	9,204
Ashe.....	16,748	13,471	565	468
Beaufort.....	11,775	10,092	9367	7,452
Berie.....	7,778	6,815	11,898	9,284
Bladen.....	8,700	7,598	8,298	8,560
Brunswick.....	6,067	5,387	4,808	4,022
Buncombe.....	28,468	18,422	6,708	8,476
Burke.....	12,882	10,088	2,665	2,721
Cabarrus.....	12,612	9,549	5,590	5,115
Caldwell.....	10,707	8,191	1,589	1,569
Camden.....	8,288	8,791	2,394	2,471
Carteret.....	8,480	7,107	2,845	2,676
Caswell.....	4,683	7,169	9,445	10,626
Catawba.....	16,055	12,469	2,684	2,477
Chatham.....	17,114	15,580	8,219	7,958
Cherokee.....	9,690	7,796	288	188
Chowan.....	8,981	8,698	5,786	4,267
Clay.....	4,057	8,175	140	141
Cleveland.....	17,298	18,700	8,066	2,871
Columbia.....	11,829	8,926	6,027	2,518
Craven.....	7,054	6,664	18,479	18,064
Cumberland.....	14,614	12,884	12,688	11,241
Currituck.....	4,710	4,495	2,067	1,581
Dare.....	8,759	2,875	409	868
Davidson.....	18,187	16,841	8,165	8,992
Davie.....	8,717	7,770	2,904	3,866
Duplin.....	11,439	10,567	7,145	8,186
Durham.....	10,646	.....	7,395	.....
Edgecombe.....	8,478	7,968	15,694	18,218
Forsyth.....	19,392	18,441	9,040	4,659
Franklin.....	10,668	9,476	10,422	11,258
Gaston.....	12,921	16,188	4,841	4,066
Gates.....	5,516	4,973	4,786	3,824
Graham.....	3,127	2,128	25	28
Granville.....	12,507	18,668	12,175	17,679
Greene.....	5,244	4,652	4,795	5,885
Gulfport.....	10,692	16,885	8,858	6,700
Halifax.....	9,467	9,187	19,440	21,162
Harnett.....	8,768	7,092	4,301	8,770
Haywood.....	12,824	9,787	522	484
Henderson.....	11,210	8,898	1,879	1,888
Hertford.....	8,867	6,122	7,914	6,721
Hyde.....	4,968	4,424	8,950	2,841
Iredell.....	19,678	16,752	6,068	5,918
Jackson.....	8,171	6,591	528	875
Johnston.....	19,780	16,996	7,459	7,465
Jones.....	8,848	8,212	3,560	4,279
Lenoir.....	8,446	7,277	6,498	8,067
Lincoln.....	10,002	8,180	2,384	2,881
McDowell.....	9,911	7,989	1,848	1,897
Macon.....	9,467	7,895	654	656
Maidson.....	17,089	12,851	716	459
Martin.....	7,168	6,661	7,188	6,479
Mecklenburg.....	59,008	79,922	19,644	16,241
Mitchell.....	12,188	8,982	578	708
Montgomery.....	8,490	6,857	2,749	2,517
Moore.....	18,816	11,485	6,649	5,882
Nash.....	12,169	9,417	8,444	8,814
New Hanover.....	10,042	8,159	19,988	18,217
Northampton.....	8,082	7,987	12,810	12,045
Onslow.....	7,282	6,000	8,021	8,229
Orange.....	9,648	14,555	5,890	9,148
Pamlico.....	4,788	4,207	2,308	2,116
Pasquotank.....	5,156	4,855	5,591	5,514
Pender.....	6,895	6,800	6,618	6,957
Perquimans.....	4,671	4,795	4,676	4,671
Person.....	8,198	7,206	6,278	6,518
Pitt.....	19,052	10,704	12,466	11,088
Polk.....	4,792	8,918	1,168	1,144
Randolph.....	21,881	17,758	3,894	8,777
Richmond.....	10,564	8,141	18,094	10,104
Robeson.....	16,461	11,942	14,847	11,238

COUNTIES.	WHITE.		COLORED.	
	1890.	1880.	1890.	1880.
Rockingham	15,098	12,431	10,263	9,313
Rowan	17,102	13,621	7,020	6,339
Rutherford	14,991	11,910	3,776	3,255
Sampson	15,577	13,347	9,219	9,540
Stanley	10,593	9,166	1,538	1,339
Stokes	14,345	11,730	2,854	3,623
Surry	16,890	13,227	2,888	2,075
Swain	5,613	3,234	253	109
Transylvania	5,330	4,323	551	517
Tyrrell	2,957	3,110	1,238	1,435
Union	15,673	13,520	5,586	4,536
Vance	6,356	.....	11,191	.....
Wake	25,887	24,239	23,316	23,650
Warren	5,824	6,386	13,536	16,293
Washington	4,904	4,554	5,296	4,374
Watauga	10,172	7,746	439	414
Wayne	15,041	12,327	11,053	12,124
Wilkes	20,555	17,257	2,120	1,934
Wilson	10,813	8,655	7,380	7,419
Yadkin	12,406	10,376	1,384	1,544
Yancey	9,195	7,369	295	325
The State	1,049,191	867,242	567,170	531,277

Legislative Session.—The regular biennial session of the General Assembly began on Jan. 8 and ended on March 9. On Jan. 20 United States Senator Zebulon B. Vance, Democrat, was re-elected for the term of six years from March 4, receiving 40 votes in the Senate to 7 for Jeter C. Pritchard, Republican, and 86 votes in the House to 13 for Pritchard and 1 for Oliver H. Dockery, Republican. An important result of the session was the passage of a law creating a railroad commission and regulating railroad charges and management. The commission consists of three members elected by the General Assembly, one member retiring every two years. It is required to make and enforce reasonable and just rates of freight and passenger tariffs, or it may cause rates to be furnished to it by any railroad company, such rates when approved by the commission being binding upon the company. It shall also make rules as to charges at all stations for the necessary handling and delivery of freight; shall make regulations to prevent unjust discrimination in the transportation of freight and passengers, and to prevent the giving, paying, or receiving of any rebate or bonus, directly or indirectly; shall establish just rates of charges for the use of railroad cars carrying all kinds of freight and passengers; and shall make, or cause to be furnished by the several roads, joint through rates for freight and passengers. The rates established by the commission shall be deemed to be *prima facie* reasonable, but an appeal from its decision will be allowed to the Superior Court, and thence to the Supreme Court of the State. The board shall investigate the business of railroads in the State, and for that purpose may visit the respective railroad offices, examine their books, and inquire generally into the management of the roads. The commissioners are given power, whenever they deem it expedient or practicable, to require any railroad to provide separate and equal accommodations for the white and colored races on passenger trains and at passenger stations and waiting-rooms. They are further required to make, or cause to be made, just and reasonable rates of charges for the transportation of packages by express companies, and for the transmission of messages by telegraph lines.

A new revenue act provides for the levy of a poll tax of 75 cents, and of an annual *ad valorem* tax of 25 cents on each \$100 for State revenue purposes. A tax of 1 per cent. is levied on all incomes and profits derived from property not taxed, and of one half of 1 per cent. on all incomes derived from salaries or fees. Various license taxes are imposed on different kinds of business, the tax on liquor dealers for selling in quantities of 5 gallons or less being \$100 per annum, and for selling in quantities of 5 gallons or more \$200 per annum. The following privilege taxes are established among others: On railroad, steamboat, and canal companies doing business in the State a tax equal to 1 per cent. of their gross receipts; on express, telegraph, and telephone companies, 2 per cent. of their gross receipts; and on sleeping and parlor-car companies \$50 for each car run in the State. Railroad and canal companies that pay a tax on their property shall be exempt from this tax, but those that are taxed on their capital stock and personal property, and not on their real estate, shall pay a tax of one half of 1 per cent. of their gross receipts. Coupled with this enactment is a new law revising and re-enacting the law for the assessment of property and the collection of taxes. By another act the State tax for school purposes is raised from 12½ to 15 cents on each \$100 of property and from 35 to 45 cents on polls.

A new oyster law imposes numerous restrictions and regulations upon the oyster industry. The Governor is given power to enforce the fish and oyster laws of the State, and to employ so much of the military or other power as may be necessary, the sum of \$1,500 being appropriated for his use. It is made unlawful for any person to take oysters from the public grounds or natural oyster beds of the State with any dredge, scoop, or other instrument, except such tongs as are worked by the hand and in ordinary use among oystermen.

For the purpose of suppressing the emigrant agents, who in recent years have induced large numbers of negroes to leave the State, an act was passed requiring each agent to obtain a license from the State Treasurer before engaging in his business. Such license shall continue for one year, and the fee therefor shall be \$1,000 for each county in which such agent does business. This is practically a prohibition of their business.

The State was redistricted for members of the State Senate and House of Representatives, and the following new congressional districts were formed:

1. Counties of Beaufort, Camden, Carteret, Chowan, Currituck, Dare, Gates, Hertford, Hyde, Martin, Pamlico, Pasquotank, Perquimans, Pitt, Tyrrell, and Washington.
2. Bertie, Edgecombe, Greene, Halifax, Lenoir, Vance, Northampton, Warren, Wilson, and Wayne.
3. Bladen, Cumberland, Duplin, Craven, Harnett, Jones, Moore, Onslow, and Sampson.
4. Chatham, Durham, Franklin, Johnston, Nash, Orange, and Wake.
5. Alamance, Caswell, Granville, Guilford, Person, Randolph, Rockingham, and Stokes.
6. Anson, Brunswick, Columbus, Mecklenburg, New Hanover, Pender, Richmond, Robeson, and Union.
7. Cabarrus, Davidson, Davie, Iredell, Montgomery, Rowan, Stanley, Yadkin, Lincoln, and Catawba.

8. Alleghany, Ashe, Burke, Caldwell, Cleveland, Gaston, Mitchell, Watauga, Wilkes, Alexander, Forsyth, and Surry.

9. Buncombe, Cherokee, Clay, Graham, Haywood, Henderson, Jackson, McDowell, Macon, Madison, Polk, Rutherford, Swain, Transylvania, and Yancey.

An agricultural and mechanical college for the colored race was established, and \$2,500 per annum appropriated for its support. It is to be at some place where the local authorities will give the necessary land and buildings. A normal and industrial school for white girls was established, its location to be determined by the same considerations. A school for white deaf and dumb children was located near Morganton, on land given to the institution, and \$20,000 appropriated for the erection of buildings.

The sum of \$10,000 per annum was appropriated to inaugurate and maintain a geological survey of the State, under the direction of a State geologist to be appointed by the Governor.

To insure a State exhibit at the World's Columbian Exposition the sum of \$25,000 was appropriated out of the moneys received from the United States as a refund of the direct tax of 1861. The earnings of the State Penitentiary and the unexpended balances of 1889 and 1890 were appropriated for its support.

An amendment to the Constitution providing that solicitors shall be elected in the same manner as judges of the Superior Court, was proposed for submission to a vote of the people in November, 1892. Other acts of the session were:

Changing the name of the Western North Carolina Insane Asylum to the State Hospital, and providing for the admission of a limited number of inebriates.

Making it unlawful for any person to play at any game of chance, at which money, property, or other thing of value is bet, whether the same be in stake or not, and declaring those who play and those who bet to be guilty of a misdemeanor.

Making it a misdemeanor to employ and carry beyond the limits of the State, or to entice out of the State, any minor without consent in writing of the parent or guardian.

Declaring the birthday of Robert E. Lee, Jan. 19, to be a public holiday.

To punish persons making false representations in obtaining certificates of registration of cattle and other animals, or misrepresenting in any way the lineage of animals used for breeding purposes.

Providing when leases of turpentine orchards shall expire, in the absence of a special contract.

To provide for the study of the nature of alcoholic drinks and narcotics, and of their effect upon the human system, in the public schools.

To prevent gambling at agricultural fairs.

Allowing maimed Confederate soldiers to peddle goods, wares, and merchandise without paying for a license therefor.

To prohibit the sale or gift of cigarettes to minors.

Authorizing the establishment of children's homes in the several counties, and providing for the maintenance thereof.

To encourage residents of the State to prospect for, discover, and utilize phosphate deposits in the navigable streams.

To protect private oyster grounds.

Removing the colored normal school from Franklinton to Warrenton, Warren County.

Providing that the duties of the Commissioner of Immigration shall hereafter be performed by the Commissioner of Agriculture, who shall be known as the Commissioner of Agriculture and Immigration.

Establishing a normal school for the colored race in the town of Elizabeth City.

Education.—At the Agricultural and Mechanical College for white pupils there were 104 pupils in attendance for the term beginning in the autumn of this year. Applications were on file from 75 others, who can not be accommodated till the completion of dormitories now in process of erection. The site for the new Normal and Industrial School for Girls, established by the General Assembly this year, was fixed in June at Greensborough, that place having offered a site and \$30,000 for a building.

Soldiers' Home.—By an act of the General Assembly this year a Soldiers' Home Association was incorporated for the purpose of providing and managing a home for needy Confederate soldiers. A tract of land near Raleigh, known as Camp Russell, owned by the State, was given to the association by the same act, and the sum of \$3,000 per annum was appropriated for the support of the institution.

Railroads.—The railroad commission established by the General Assembly this year, organized soon after the close of the session and began the work of establishing standard rates of railroad tariff for the State. A standard passenger rate of $3\frac{1}{4}$ cents a mile for first-class passage and 2½ cents for second-class passage was adopted, while certain branch lines which are not yet on a good-paying basis were allowed to charge $3\frac{1}{4}$ cents for first-class and 3 cents for second-class passage. No radical reductions were undertaken, and the railroads generally were not disposed to attack the work of the commission. An assessment of railroad property for taxation was made by the commission, the total assessed valuation of such property being fixed at \$19,800,185.47. In 1890 the total assessed value was about \$12,000,000.

NORTH DAKOTA, a Northwestern State, admitted to the Union Nov. 3, 1889; area, 70,795 square miles; population, according to the census of 1890, 182,719. Capital, Bismarck.

Government.—The following were the State officers during the year: Governor, Andrew H. Burke; Lieutenant-Governor, Roger Allin; Secretary of State, John Plittie; Treasurer, L. E. Booker; Auditor, John P. Bray; Attorney-General, C. A. M. Spencer; Commissioner of Agriculture and Labor, H. T. Helgesen; Commissioner of Insurance, A. L. Carey; Superintendent of Public Instruction, John Ogden; Railroad Commissioners, George W. Harmon, George H. Walsh, Andrew Slotten; Justices of the Supreme Court, Guy C. H. Corliss, Alfred Wallin, J. M. Bartholomew; Clerk, R. D. Hoskins. All these officers are Republicans.

The Senate consists of 21 Republicans, 5 Democrats, and 5 Farmers' Alliance men. The House has 40 Republicans, 10 Democrats, and 6 Farmers' Alliance men.

Finances.—The first annual report of the State Treasurer gives the following figures: Total receipts, including a balance of \$64,694.92 from the Territorial Treasurer, \$609,511.83; total disbursements, \$504,720.32; balance, \$104,791.51. Of this, \$29,133.50 was credited to the general fund, \$1,705.99 to the university-bond fund, \$2,589.29 to the stock indemnity fund, \$56,113.01 to the permanent school fund, and \$5,216.92 to the bond interest fund.

Legislative Session.—The Legislature met Jan. 6, 1891, and adjourned in March at the expiration of the sixty days allowed by the Constitution. The first part of the session was given to the election of a United States Senator in place of Gilbert A. Pierce, whose term of office expired. The choice fell upon Henry C Hansbrough.

The most important, perhaps, of the measures passed was the Australian election law. The amount of appropriations made, though not much more than half the sums asked for, exceeded by a considerable amount the revenue in prospect.

An attempt to resubmit the question of prohibition was made in the House by a resolution repealing Article XX of the Constitution. This passed by a vote of 32 to 29, and was sent to the Senate and adopted by a vote of 16 to 15. But all record of this action in the Senate was expunged from the journal by a vote of 18 to 12.

Three bills that passed were vetoed by the Governor—one granting a school section to Wahpeton School of Science; one providing that a person could leave the State with the intention of remaining, and then return and be entitled to citizenship again in six months; and the third, giving persons the right to erect and maintain warehouses on railroad right of way for an indefinite period for the sum of \$1. In his objections to the last-named bill the Governor cited a similar act passed in Minnesota in 1885, and declared invalid by Chief-Justice Gilfillan in the case of the State *vs.* the Chicago, Milwaukee and St. Paul Company.

Following are the more important of the bills passed:

To promote irrigation and providing for a State superintendent of irrigation and forestry.

Appropriating \$25,000 for the State exhibit at the World's Columbian Exposition.

For the protection of game.

To prevent and punish cruelty to animals.

Amending the law in regard to marriageable age, making it eighteen and sixteen, providing that males under twenty-one and females under eighteen shall not receive license without the consent of parents or guardians.

For cancellation of illegal railroad taxes.

For appointment of sheep inspectors.

Amending the act authorizing counties to issue bonds to procure seed grain for needy farmers resident therein.

Amending the school law.

For the destruction of noxious weeds.

Appropriating \$8,500 for compiling the State laws by a commission of three to be appointed by the Governor.

Providing for bounty of not more than \$3 nor less than \$1 on wolf and coyote scalps.

Providing bounty for the manufacture of potato starch.

Providing for the burning of native (North Dakota) coal in the State institutions.

Memorializing Congress for the retention of Fort Lincoln.

Retransferring land granted for normal school to Elk Valley Farming Company.

Constitutional amendment to increase the State debt limit.

Designating Fargo Agricultural College as a recipient of congressional donations of land.

Appending law authorizing counties to issue bonds for seed grain.

Authorizing payment of portion of Territorial debt assumed by North Dakota.

Directing the Scandinavian language to be taught in the university.

Locating the blind asylum in Pembina County.

Memorializing Congress for a law and appropriation for the establishment of a national scientific rain bureau and college at Washington.

Appropriating \$53,000 for the support of the Penitentiary.

Education.—At the time of the admission of the State there were 35 graded and 1,366 ungraded, or a total of 1,401 common, graded, and high schools, besides the State University. The first superintendent's report after the admission gave the total number as 1,583. Sixty school-houses were built during the year, and the estimated value of school property was \$1,147,201.59. There were 2 sod, 40 log, 2 stone, 20 brick, and 1,392 frame school-houses, with a total seating capacity of 48,105. The number of children of school age was 37,472; the whole number enrolled 30,821, with an average daily attendance of 17,546. The average number of days taught was 103, the average cost per month for each pupil enrolled \$3.31. Fifty districts had no school. The total number of teachers employed was 1,894; the total amount of teachers' salaries, \$320,551.72; the average wages per month of male teachers, \$38.97; of female, \$34.42.

Besides these, there were in independent districts in the cities and towns 4,722 pupils enrolled, with an average cost of \$4.79 a month to each, and a total number of 88 teachers, with average monthly salary to male teachers, \$63.33; and to female teachers, \$49.28. The value of school property in these districts is \$368,400, and the amount of indebtedness \$217,357.70. A total of thirty-one weeks of institutes were held. The Legislature of 1891 appropriated \$300 for a library for the State Superintendent.

At the close of 1891 the number of schools in operation was estimated at 1,764, with a school population of 45,439.

The normal schools at Valley City and Mayville, which have been supported by voluntary gifts from citizens, received appropriations from the Legislature after considerable opposition.

The State University, at Grand Forks, completed its seventh year in June, 1891. It has 6 professors, including the president, and 4 instructors, including the United States military officer, and at the last annual report had 110 students. At the opening of the new term in January, 1892, a total of 175 students was reported. It has a three years' preparatory course, and a four years' normal course, besides four years' courses each in arts, science, and letters. The Legislature appropriated \$60,700 to this institution.

The Agricultural College, at Fargo, has been supported by the Government appropriations for agricultural experiment stations and colleges, but the Legislature of 1891 appropriated \$25,000 for its use.

Several denominational and private colleges and academies have been established and are in operation; among them are the Congregational College at Fargo, the Presbyterian College at Jamestown, Rolla University, and others. The last-named, which is non-sectarian, opened in January, 1889, with 30 students in the academic department, and 7 were matriculated into the

collegiate course. Its revenue is derived from tuition fees and voluntary subscriptions.

The Valley City Normal School will have a new building in the spring to cost \$20,000. Increased attendance is reported. The Mayville normal school also received an appropriation.

Charities.—One hundred and fifteen thousand and one hundred and fifty dollars was appropriated by the Legislature for the insane asylum; \$16,400 for maintenance of the deaf and dumb school, and \$10,000 for a building; \$10,000 to the Soldiers' Home, at Lisbon.

Militia.—The sum of \$11,000 a year for two years was appropriated for the State militia.

Agriculture.—Unusually large crops were raised this year. Following are the figures published by the State Commissioner of Agriculture and Labor:

CROPS.	Acres.	Bushels.
Wheat.....	2,565,502	64,718,328
Oats.....	420,124	17,571,523
Barley.....	143,368	5,270,685
Flax.....	106,618	1,241,018
Rye.....	11,893	310,067
Corn.....	15,093	865,573
Potatoes.....	19,566	3,493,251

Ninety-seven thousand five hundred and eight acres of millet and Hungarian yielded 225,459 tons, and 16,702 acres of other tame grasses 27,972 tons. The average yield of wheat per acre was 22½ bushels. In 1887 it was 17.

Attention has been directed for the past two years to the production of sugar beets. During the year the State Department of Agriculture furnished seed to more than 200 localities, covering practically every variety of soil and climate within the State, and from all these localities beets were furnished for analysis. The average of crystallizable sugar from the crop of 1890 in the Red river valley was 13.80 per cent., and in 1891 12.83 per cent.; the difference is attributed to the greater rainfall of 1891. This compares very favorably with the average sugar content of the beets grown in Germany in 1890, which was 12.2 per cent. It is believed, however, that other parts of the State have a soil better adapted to the production of sugar beets than that of the Red river valley, the soils farther west being lighter and dryer.

Of the 45,000,000 acres of land in the State, about three fourths is susceptible of profitable tillage, while less than 4,000,000 acres are under cultivation.

Live Stock.—The assessors' returns show the total number of horses to be 134,538; cattle, 260,663; mules and asses, 7,410; sheep, 231,355; hogs, 39,783; total, 673,794. The sheep industry has increased 430 per cent. in the past two years. The prices paid for sheep by farmers average \$3.50 to \$4 a head. The people of Stark and Morton Counties, according to a local paper, are offering free fuel and building sites for woolen mills.

Labor.—It is expected that the demand for farm laborers in 1892 will be unprecedentedly large. The President of the State Farmers' Alliance has issued a circular giving the prices that have been paid for farm work: Farm hands, \$20 to \$25 a month; day hands, \$1 to \$2.25 a day; thrashing, \$2 to \$2.25 a day;

thrashing wheat in the shock, 10 to 12 cents per bushel, everything furnished by the machine; thrashing wheat in the stack, 6 to 7 cents per bushel; teams, two-horse, \$3 to \$4 per day; plowing, per acre, \$1.50 to \$2.

Sale of School Lands.—These lands aggregate about 2,500,000 acres, and are forbidden by the Constitution to be sold at less than ten dollars an acre. About 30,000 acres were sold in 1891, at an average of more than \$19.50, giving to the permanent school fund nearly \$600,000, of which \$115,000 was paid in cash, and the rest is to be paid in installments, and draws 6 per cent. interest. Seventy thousand acres will be offered for sale in March. They are in the Red river valley counties and contiguous to lands that yielded 25 bushels of wheat to the acre at the last harvest.

Land Titles.—A Supreme Court decision of great importance to some of the settlers of the northeastern part of the State was reported in a Washington dispatch of March 2, 1891:

The St. Vincent extension of the St. Paul, Minneapolis and Manitoba Railway, by the terms of its grant, laid claims to the lands on both sides of its constructed road between St. Cloud and St. Vincent. This extension, however, runs north from Fergus Falls, often at a distance of less than ten miles allowed by the grant, from the Red River of the North, the boundary line between Minnesota and North Dakota. Nevertheless, the company claimed the right to the full ten miles, notwithstanding the fact that it would include large tracts of land across the river and within North Dakota. This claim was disallowed by the Interior Department on the ground that, as the railroad was built wholly within the limits of Minnesota, it could not properly claim lands lying within a neighboring State. The Supreme Court, however, subsequently, in the case of this company against Phillips, wholly disregarded the boundary limits of the State, and thus recognized the right in the company to such lands within North Dakota as lie within the extended limits, free from claim, at the date of the definite location of the road—Dec. 19, 1871. The ruling in that case will govern in the present case. No grant, up to the time of the Phillips decision, has been recognized in North Dakota, the Government has disposed of and patented large tracts of these lands which, under this decision, must be held to have inured to the company. These lands include parts of Fargo and Grand Forks and other important towns and settlements. The court in the decision referred to, further held that it was no defense to the action that the lands involved would include thriving towns and villages, and that the company was not in lache in not bringing suit earlier. Application had been made by the railroad to secure adjustment limits of its grant within North Dakota, and, until such adjustment has been made, no reliable estimate of the amount of land involved can be made. In cases where patents have been issued, the matter is now beyond the jurisdiction of the Government, and the company must assert its claim through courts. The Senate resolution adopted Saturday directs the Secretary of the Interior to negotiate with the railroad company with a view of securing its consent to make selections of other public lands in lieu of these lands in North Dakota. The decision rendered to-day by the Supreme Court in the matter of overlapping the granted lands between this company and the Northern Pacific company, has practically rendered it impossible to satisfy the grant to the Manitoba company within its limits. If negotiation and settlement is possible, therefore, it will likely be in line of the Senate resolution, namely, by agreement with the company by which it would take lands outside its limits. It has been suggested that the company

might accept a settlement on cash basis. Persons conversant with cases of similar character express an opinion that the Government will hardly permit persons holding its patent to their homes to be enjoined after twenty years' residence until all measures for their relief have failed.

Tax Decision.—An important decision was lately rendered in the Supreme Court in reference to tax sales:

The Stutsman County tax case has been before the courts for several years, and involved the question as to whether a purchaser of a tax certificate from a county, at the Treasurer's annual sale, should be reimbursed by the county in case it should turn out that his certificate was void; whether he should receive from the county the money he put in for the invalid certificate and the additional usurious interest allowed in this class of cases by the laws of the Commonwealth. The case first came before the old Territorial Supreme Court, and that tribunal decided that if a person purchased a certificate from the county, the county was liable to the purchaser for the face of the document and 30 per cent. interest annually thereon. From this order Stutsman County appealed. Since statehood the State Supreme Court in the case of *Tyler vs. Cass County* has had the precise question before it, and in an elaborate and exhaustive opinion by Justice Bartholomew took the opposite position—that the rule of *caveat emptor* applied—that the legal maxim that "he who purchased must beware"—was in full force in tax-sale proceedings, and the State court accordingly ruled that the purchaser of a certificate that was afterward declared invalid lost his money invested. On the correctness of this decision many a lawyer and the bar of the State have differed. But a decision has been rendered by the last court known in the jurisprudence of the United States, and they have declared that the views taken in the opinion by Justice Bartholomew are the right ones; that where a person invests his money in an enterprise that under guise of law gives a rate of interest unknown to any legitimate business, and it is afterward declared wrongfully invested, he loses it. The case involved about \$85,000.

NOVA SCOTIA, with one exception, the smallest of the Canadian provinces; area, 20,907 square miles; population, by the census of 1891, 450,523, an average of 22 to the square mile, more dense than that of any other province except Prince Edward Island. It consists of the peninsula of Nova Scotia proper and the island of Cape Breton. Halifax, the capital, with its military garrison, is in population the fourth city of the Dominion. It is the principal naval station of the British North American and West Indian fleet; is the only garrison town in the Dominion of Canada of which Great Britain still retains actual military possession, and is one of the most effectively fortified posts in the world.

Mines and Minerals.—For its extent, Nova Scotia presents great diversities of geological formation as of mineral resources. If we draw a line upon the map of its peninsular portion, from the most southeastern point on the shore of Chedabucto Bay, nearly due west to about the head of St. Mary's Bay, in Digby County, the tract of country between this line and the Atlantic Ocean will be over sixty miles in width in the most western part of the province, while it narrows almost to a point as we proceed eastward to Canso. This comparatively large district is auriferous throughout. The northern and larger portion of Cumberland, a large part of southern Colchester, all northern Hants, northern Pictou,

southeastern Antigonish, western and southern Inverness, western Richmond, the whole eastern section of Cape Breton County, and southern Victoria, belong to the carboniferous formation; and a large proportion of these extensive tracts consists of productive coal-measures. The trap rocks of the new red-sandstone district abound in native gems. Gold mining began in Nova Scotia about 1862, the auriferous area being supposed to be much smaller than it has eventually proved. Since then it has been shown by compilations from sworn official returns that, taken throughout, the Nova Scotian auriferous quartz has yielded more gold per ton than that of any other gold-producing country; that the average net yield of gold per day's labor was higher than that in any other country; and that the purity and unalloyed character of the gold was unsurpassed by any other gold-mining region, and only equaled by that of the Ural mountains, Russia. The Nova Scotian auriferous ores are therefore exceptionally easy of treatment. The twenty mining districts exploited are widely scattered over the auriferous district, and their average product is nearly the same. The total quantity of gold mined from 1862 to 1890, inclusive, was 506,675 ounces. This, at the average rate at which Nova Scotian gold has been selling in London, is in value about \$10,133,501. The gold product for 1890 was 24,358 ounces, being equivalent to \$487,254.04. Silver, native and in carbonates and sulphides, is most frequently found in the later metamorphic formations, but also in the limestones of the lower carboniferous age. Argentiferous ores of a promising character are found at Smithfield, in southern Colchester. Galena has been found about the head waters of the Gold and La Have rivers, Lunenburg County, which gave 100 ounces of silver to the ton. In Cape Breton, one quartz vein, fifteen inches thick, afforded 39½ ounces of silver to the ton. Galena is in Nova Scotia widely scattered and in rocks of every age. In Gay's River settlement, Halifax County, it is found in crystals disseminated through the limestone drift. In Pembroke, Colchester County, it is found in like formation, extending over several miles of country. It is also found at Musquodouoit, Caledonia, Victoria County, and near Sydney, Arichat, and Port Hood, and at various other points. These afford a percentage of from 70 to 150 per cent. per ton of lead.

Tin has been discovered in Shelburne County, associated with decomposed granite; also at Tangier, Halifax County, and Country Harbor, Guysborough County.

The iron deposits of Nova Scotia, considered with reference to their number, extent, and quality of ores, are immense. On the south of the Annapolis valley there is a belt of Devonian strata from three to five miles in width, and extending eastwardly and westwardly about sixty miles, being nearly equally divided by an intruded mass of granite. The western of these divisions contains what are known as the Clementsport iron deposits; the eastern, as those of Nietan. At Clementsport two beds have been opened, the uppermost of which varies from two to four feet in thickness, and consists of metamorphosed specular ore, yielding about 33

per cent. of metallic iron. The lower bed shows one thickness of three feet and another of three and a half feet. This ore is magnetite, and yields 48 per cent. of metallic iron. Indications of the continuation of these beds may be seen from ten to twelve miles in the direction of their strike. Upon the Nictan river several distinct and parallel beds are found of similar ore—magnetites and hematites—varying from four to twelve feet in width, and extending east and west for some twenty miles. These ores yield from 53 to 59 per cent of metallic iron. Bog ores of superior quality abound in the same vicinity. The best known of the Nova Scotian iron deposits is that of Londonderry or the Acadian mines in Colchester County. The deposit being worked consists of a vein stone of ankerite, varying in width from 30 feet to 150 feet, the ore proper being for the most part limonite, but also containing considerable quantities of micaceous hematite, the whole giving 57.85 per cent. of metallic iron. The iron produced by the Londonderry mines is said to be the very best for steel making. At the Acadian mines 40,486 tons of iron were produced in 1890. At Brookfield, near Truro, there is a deposit of limonite and hematite believed to be even more extensive than that of Londonderry. At Old Barns, near Truro, are rich beds of limonite and specular ore. The iron deposits of Pictou County are believed to be more extensive than those of any other district in the province. Analyses show the following returns from the several species of ore there found: Limonite, from 56 to 65; hematite, from 43 to 45; and specular ore, from 64 to 68 per cent. of metallic iron. Immense but as yet undeveloped deposits are also found in the island of Cape Breton, at Big Pond, near the great Bras d'Or, George's River, Whycomah, East Bay, and elsewhere, all on the verge of safe, navigable water and near to coal mines, the ores from which average some 60 per cent. of metallic iron.

Copper ores have been found widely disseminated throughout Nova Scotia, occurring in rocks of every geological age. Lumps and grains of virgin copper and streaks and pockets of different varieties of cupriferous ore have been found in considerable quantity through the trap of the new red-sandstone period, and small veins and nests of the sulphate and green carbonate of copper, yielding as high as 74 per cent. of metallic copper, occur at numerous points in the coal measures of Cumberland, Colchester, and Pictou, and elsewhere. At Polson's Lake, Guysborough, Cheticamp, Inverness, and Coxheath, Cape Breton, large and rich deposits of cupriferous ore are found.

The coal deposits of Nova Scotia, so far as known, are all bituminous. The most eastern of these fields covers the eastern part of Cape Breton County, with a corner of Victoria, and comprises about 200 square miles. Within this space mining operations have been carried on upon nine different coal beds, varying in thickness from three to twelve feet. The estimate of available coal of the beds opened for working is 212,000,000 tons. These coal beds dip beneath the sea, and the available coal product from the submarine beds alone has been cautiously estimated at 2,000,000,000 tons. Nearly the whole

gulf coast of Inverness County presents workable beds of coal. The Pictou coal field comprises a superficial area of about 35 square miles, but the thickness of coal within this comparatively small basin is great. The coal beds may be considered as divided into two groups—upper and lower. In the upper group, within a thickness of 2,450 feet of strata, there are seven available coal seams. The lower group consists of nine beds. The carboniferous area of southern Colchester and northern Hants remain, in a great measure, unexplored. Exclusive of these districts, the total area of the productive coal measures of Nova Scotia has been estimated at 685 square miles.

The total output of coal in the province for 1890 was 1,786,111 tons, and 31,296,172 tons in all have been produced from these mines since they were opened.

The royalty payable to the provincial revenue is, for gold, 2 per cent.; for coal, nine tenths and seven tenths of a cent per ton of 2,240 pounds; three cents for every ton (of 2,000 pounds) of iron ore; ten cents on every ton (2,000 pounds) of copper ore; and 5 per cent. on the value of silver, lead, and tin. All other minerals are without royalty, and belong to the owners of the soil where found. Rich deposits of antimony are found at Rawdon, Hants County; manganese of superior quality in the same county; barytes in great abundance in Brookfield and Five Islands, Colchester; molybdenite in quantity in Cape Breton; and the grindstones of the Jaggins shore, in Cumberland, have acquired a world-wide fame. Gypsum, limestone, molding sand, and building stone in the form of diversified granites, freestones, and marble abound.

Marine and Fisheries.—Taken as an individual nation, Canada ranks as the third of ship-owners, being only surpassed in this respect by Great Britain and the German Empire. An aggregate for the Dominion of Canada, on the registry books, on the 31st of December, 1890, gives a net tonnage of 1,024,974. To that aggregate Nova Scotia contributed no less than 464,194 tons, being considerably over one third of the whole Dominion tonnage. In the same year (1890) the number of new vessels built in Nova Scotia was 150, tonnage 33,907, as against 285 vessels of 52,378 tons for the whole Dominion. The total value of these new vessels, at \$45 per ton, would be \$2,357,010. The sea fisheries of Canada, on the coasts of Nova Scotia, New Brunswick, Prince Edward Island, Quebec, and British Columbia, are among the richest in the world: while the fresh-water fisheries of the great lakes and rivers of the country are nowhere to be surpassed. The total value of the fisheries of Canada for the year 1890 was \$17,714,902; and to this aggregate Nova Scotia alone contributed \$6,636,445, being considerably over one third of the total catch. The number of vessels and boats employed by the latter province in the fisheries of 1890 was 14,290; value, \$1,733,071; number of men, 27,684; nets, 3,130,394 fathoms, valued at \$763,160; other fishing material valued at \$747,080. Nova Scotia has been sometimes misrepresented as a sterile country. It is a real misrepresentation. It may be stated in general terms that the province does not grow all the wheat that it eats, but, never-

theless, it grows cereals equivalent to all the food of that class consumed by the people. It is noted as a grazing country, and it is celebrated for its hardy fruits—as apples, pears, plums, and cherries—having repeatedly won the highest prizes at fruit exhibitions, both in North Amer-

ica and in England. A member of the Dominion Parliament recently, playfully but truthfully, remarked in the House of Commons that in the blooming season he could, in the Annapolis valley, drive without interruption for over a hundred miles under the apple blossoms.

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OAH SPE (pronounced ho-as'pe), a book that professes to have been produced through divine inspiration. Its writer was Dr. John B. Newbrough, who was born in Edinburgh, Scotland, about 1825, practiced dentistry for many years in New York city, and died there April 23, 1891. He was a believer in spiritualism, and in accordance with his interpretation of that belief he abstained for seven years from animal food, made frequent fasts, and spent much time in prayer and meditation. Finally he believed he was spiritually directed to obtain a type-writer, which he did, and for an hour at sunrise each day he seated himself before it and struck the keys as the supposed spirit inspired him. At the same time he was told not to read what he had written. After a time he was told to "read and publish," and he found he had produced this book. He had given away all his property, but in some mysterious manner \$10,000 came to him for the expenses of publication, and in 1882 the book was printed and issued. The full title is: "Oahspe; a New Bible in the Words of Jehovih, and his Angel Embassadors. A Sacred History of the Dominions of the Higher and Lower Heavens on the Earth for the Past Twenty-four Thousand Years; being from the Submersion of the Continent of Pan in the Pacific Ocean, commonly called the Flood, or Deluge, to the Kosmon Era. Also a Brief History of the Preceding Fifty-five Thousand Years, together with a Synopsis of the Cosmogony of the Universe; the Creation of Planets; the Creation of Man; the Unseen Worlds; the Labor and Glory of Gods and Goddesses in the Etherian Heavens; with the New Commandments of Jehovih to Man of the Present Day. With Revelations from the Second Resurrection, formed in Words in the Thirty-third Year of the Kosmon Era."

Oahspe teaches that there is one Supreme Being, whom it calls Jehovih. It condemns all war and the eating of animal food. It declares that there is a sunken continent in the Pacific Ocean, which proves the origin of the story of the flood, and predicts that all present religious systems will be superseded by the religion taught in Oahspe, whose followers shall be called Faithists. They will be anti-warriors, non-flesh-eaters, and instead of preaching religion will practice it, working for others and not themselves. The present systems of government and social order will be abrogated. Co-operation will take the place of competition, and wealth and poverty will be superseded by universal comfort and content. In the words of the preface, Oahspe is intended to mark "the beginning of the new or Kosmon Era and Kosmon Church, without any creeds or worshipful gods, lords, saviours, priests, or preachers, but in which all

people shall worship the Great I Am, Jehovih." Its length is about equal to that of the Old Testament. It is divided into thirty-six books, the titles of some of them being: "Book of Jehovih," "Book of Sethanes, Son of Jehovih," "The Lord's First Book," "Book of Fragapatti, Son of Jehovih," "Book of Cpenta-Armij, Daughter of Jehovih," "Book of the Arc of Bon," "Book of Jehovih's Kingdom on Earth," and "Book of Discipline." It contains many new and original words, some of which are: "Adu," death; "Beast," the animal man; "Che'ba," the desire that comes of inspiration; "C'Vorkum," the roadway of the solar phalanx; "Emun," choking atmosphere; "E'senauers," heavenly musicians; "Hada," atmosphere; "Ili-dan," highest light; "Isaah," a Chinese prophet; "Scpe-oke," a spirit house; "Schood of Hein," a negative place; "Homa," refreshing perfumes. It is divided into verses, like the Bible.

The following passages will give a fair idea of the style and contents of the book:

Unto Thee will I acknowledge my iniquities; I can hide nothing from the eye of my Creator. Hear me, then, O Father!

I took up arms against my brother. With great armies I encompassed him about to despoil him.

His widows and orphans I multiplied by the stroke of my sword. To my captains and generals who showed great skill in killing I built monuments in stone and iron. Yea, I inscribed them from top to bottom with their bloody victories.

To my colonels and generals I gave badges of gold. I called to the damsels, saying: "Come, a great honor I give to you: ye shall dance with the officers of death." I covered the earth over with drunkards and widows and orphans; to beggary I reduced them, but I whetted their pride by saying, Behold what great standing armies we have. Such is the voice of man, O Jehovih! In all the nations of the earth this voice riseth up to thee. As thou spakest to Zarathustra, and to Abraham, and to Moses, leading them forth out of darkness, O speak thou, Jehovih! Man hath faith in thee only; thou alone wast sufficient in the olden time; to-day thou alone are sufficient unto thine own creation. Speak thou, O Jehovih.

Thou, O Jehovih! As thou hast declared thyself in the Book of Jehovih!

To thee I covenant myself, to be thine forever! And to thee only, O Jehovih.

And I abjure all gods but thee. And I abjure all lords but thee. And I abjure all saviours but thee. My corporeal body I dedicate and covenant unto thee, to be in thy service during all my life. My spirit I also dedicate and covenant unto thee, to be in thy service forever. My mind and soul I dedicate to thee, to be in thy service henceforth and forever. I will search to find the highest Light, and I will practice the same toward all men, women, and children. Unto them will I not only do as I would be done by, but more; I will do for them with all my wisdom and strength, all my life.

OBITUARIES, AMERICAN. **Abbott, Emma** (Mrs. WETHERELL), singer, born in Chicago, Ill., about 1850; died in Salt Lake City, Utah, Jan. 5, 1891. She developed a talent for music at an early age, and was taught to sing and play the guitar by her father, who had settled in Peoria, Ill., as a music teacher. While singing in a parlor entertainment in Toledo, Ohio, in 1870, she attracted the attention of Clara Louise Kellogg, who induced the father to allow her to bring Emma to New York and give her a musical training. Through Miss Kellogg's influence, the young singer obtained an engagement as principal soprano in the choir of the Rev. Dr. Chapin's church. There her ability, enthusiasm, and modesty led the congregation to make up a purse of \$10,000 to enable her to continue musical study in Europe. In 1872 she went abroad; studied singing and dramatic action in Paris and Milan; was befriended by the Baroness Solomon de Rothschild, when she became ill and lost her voice; and was married secretly to Eugene Wetherell, the custodian of her New York funds. Her first engagement was with Ernest Guy, in London, in "The Daughter of the Regiment." Her refusal to sing in "La Traviata" led to a famous operatic sensation and delighted her American benefactors. From her second season her financial success was unbroken, and she appeared before crowded houses in the principal cities of the United States and Europe up to the time of her fatal illness. Her most popular parts were in the operas "Paul and Virginia," "Norma," "Semiramide," "Fra Diavolo," "King for a Day," "The Mascotte," "The Mikado," "Romeo and Juliet," "Pinafore," "The Gondoliers," "Lucia di Lammermoor," and "The Three Cavaliers." She survived her husband two years, and left an estate valued at nearly \$500,000. Her will directed her executors to invest \$200,000 for the benefit of her father and mother; to pay about \$150,000 to specified relatives and friends; and \$5,000 each to eight specified churches, which she had attended at various times; and to distribute the residue of her estate between eight charitable institutions in various parts of the country and two lady friends.

Abbott, Josiah Gardner, jurist, born in Chelmsford, Mass., Nov. 1, 1815; died in Wellesley Hills, Mass., June 2, 1891. He was fitted for college by Ralph Waldo Emerson, was graduated at Harvard in 1832, and was admitted to the bar in 1835. The year of his majority he entered political life as a Representative in the State Legislature, and in 1841-'42 he was a member of the State Senate, where he served first as a member and in his second term as chairman of the committees on Railroads and on the Judiciary. In 1844 he was elected a delegate to the National Democratic Convention, and from that time till his death he attended every national convention of his party excepting two, and was almost invariably chosen chairman of the Massachusetts delegation. He served on Gov. Morton's staff, was a member of the State Constitutional Convention in 1855, and was judge of the Superior Court of Massachusetts for Suffolk County, with chambers in Boston, from the establishment of the court in 1855 till its abolition in 1859. In 1874 he was Democratic candidate for Congress in the 4th Massachusetts District. He received 6,429 votes, against 5,717 for Rufus S. Frost, Republican. The certificate of election was given to Mr. Frost, but Judge Abbott contested the seat, and the House of Representatives awarded it to him in July, 1876. He served on the committees on Public Buildings and Grounds, and on the Elections in South Carolina; was conspicuous in the legislation that resulted in the establishment of the Electoral Commission; and was appointed one of the three Democratic members of it on the part of the House in 1877. In 1875 and 1877 he was the unsuccessful Democratic candidate for United States Senator, and in 1878 for Governor.

Adler, Samuel, clergyman, born in Worms, Germany, Dec. 3, 1809; died in New York city, June 9, 1891. He was trained in Hebrew and the rabbinic literature

by his father, who was a rabbi. He studied at the Rabbinic High School in Frankfort, and from 1831 till 1836, he was a student of philosophy and Oriental languages at the universities of Bonn and Giessen. In the spring of 1836 he was appointed minister to the congregation in his native city. He remained there till 1842, when he became rabbi of the town and circuit of Alzey. Slowly at first, then with increased and growing decision, he identified himself with the principles of the reformatory movement in Judaism, and soon became a leader. As such he took part in the three great conventions of rabbis, held in Brunswick, Frankfort, and Breslau, in 1844-'46. In the autumn of 1856 he became rabbi of the Temple Emanu El, in New York city. He was installed in the following spring, and labored till August, 1874, when he retired from active service, and was made rabbi emeritus. During his active career he was recognized as one of the most learned, progressive, and liberal of modern Jews. He was opposed to human slavery in every form, vigorously supported the Federal Government throughout the civil war, enjoyed the friendship and confidence of President Lincoln, and welcomed Major Anderson to his synagogue after the fall of Fort Sumter by pronouncing over him the ancient priestly blessing of the Hebrews. Dr. Adler was the father of Prof. Felix Adler, founder of the Society of Ethical Culture.

Alcock, Thomas, manufacturer, born in Birmingham, England, in 1814; died in New York city, Dec. 27, 1891. In 1845 he came to New York city and opened a drug store under the Astor House, and in 1864 invented the porous plaster that bears his name. He applied himself closely to his drug and manufacturing business till the beginning of the civil war, when he entered the national army and was appointed assistant adjutant-general on the staff of Gen. Yates. While in charge of the Elm Street recruiting office, he aided in organizing the 4th New York Heavy Artillery, and went to the front with it as major. He took part in nineteen battles, was wounded at Ream's Station, and was promoted brigadier-general for gallantry in action. After the war he resumed his business in New York city.

Allen, William, jurist, born in Brunswick, Me., March 31, 1822; died in Northampton, Mass., June 4, 1891. He was a son of the Rev. William Allen, who was President of Dartmouth College in 1816 and of Bowdoin College in 1819. In 1839 he removed with his parents to Northampton, where he resided until his death. He was educated at Phillips Academy, Bowdoin College, and Amherst College, being graduated at the latter in 1842, and then studied law at Yale, where he was graduated in 1844. In the following year he was admitted to the bar. Early in life he was an active Free-soiler, but after beginning his professional career he applied himself to it wholly, and was never conspicuous in political life. He was appointed by Gov. Washburn a judge of the Superior Court of Massachusetts in 1872, and Gov. Long promoted him to be a justice of the Supreme Court in 1880. The latter office he held until his death. Judge Allen was one of the five judges who sat on the famous Andover heresy case.

Allen, William, philanthropist, born in Windham, Conn., May 23, 1810; died in Columbus, Ohio, Nov. 29, 1891. In early life he accompanied his parents to Rhode Island, where he received a limited education, learned the tailor's trade, and for a time was editor of "The Rhode Islander." In 1829 he removed to Columbus, Ohio, where for several years he was editor of "The Ohio State Journal," and passed from that paper to "The Cincinnati Gazette," with which he was also long connected. Subsequently he bought a farm in Sharon, and retired from journalism. More than fifty years ago he began agitating for the passage of a national law giving to every actual new settler in the West a homestead of 100 acres. He traveled all over the country, lecturing on the scheme, explaining it in newspapers, and urging on legislatures their support and co-operation. He defrayed all his expenses,

spending about \$60,000 in perfecting his plans and making them known, and in 1863 found his reward in the adoption by Congress of the present national homestead law. But his efforts impoverished him; he lost, piece by piece, all his property. He was too proud to avail himself of the great result of his persistent labors, was permitted to spend several years as a common beggar, and on Sept. 30, homeless, friendless, "Land-bill Allen" was sent to the Franklin County Infirmary, where he lived scarcely two months. From July 1, 1865, till June 30, 1890, the number of grants of public land under the homestead law aggregated 122,008,887 acres, and in the single year before his death 5,531,678 acres.

Angle, James Lansing, jurist, born in Henrietta, Monroe County, N. Y., Dec. 19, 1818; died in Greece, N. Y., May 4, 1891. He received an academical education, studied law, and was admitted to the bar in Rochester, N. Y., in 1845; was clerk of the Board of Supervisors of Monroe County in 1850-'51; member of the Assembly in 1854; city attorney in 1857; and chairman of the Board of Supervisors in 1863-'65. On Dec. 22, 1877, he was appointed by Gov. Robinson a justice of the Supreme Court of New York to fill a vacancy, and in 1883 he was elected for a full term, and served until his retirement, on account of having reached the constitutional limit of age, Jan. 1, 1889. He was a Democrat in politics, and was several times an unsuccessful candidate for Congress and for the bench of the Supreme Court of the State.

Appleton, John, jurist, born in New Ipswich, N. H., July 12, 1804; died in Bangor, Me., Feb. 7, 1891. He was graduated at Bowdoin College in 1822, studied law, and entered into partnership with Elisha Allen, afterward chief justice of Hawaii and minister resident of that kingdom at Washington. In 1852 he was appointed a justice of the Supreme Court of Maine, in 1862 was chosen chief justice, and in 1869 and 1876 was reappointed justice. He retired from the bench in 1883, and engaged in private practice till 1885, when the infirmities of age caused him to retire. He was one of the most eminent jurists in the State; as reporter of decisions he compiled two volumes of "Maine Reports" (Bangor, 1841); and he was the author of "Appleton on Evidence" (1860). Many important statutory changes in the laws of evidence and other branches of jurisprudence resulted from his efforts.

Artell, Samuel B., jurist, born in Franklin County, Ohio, Oct. 14, 1819; died in Morristown, N. J., Aug. 6, 1891. He was educated at Oberlin and Western Reserve Colleges, studied law, and removed to California in 1851. Three years afterward he became prosecuting attorney of Amador County. In 1867 and 1869 he was elected to Congress from the 1st California District as a Democrat, and served on the committees on Agriculture and on the Pacific Railroad. Under President Grant he became Governor of Utah Territory in 1874, and under President Hayes he was transferred to New Mexico. In 1882 he was appointed chief justice of the Supreme Court of New Mexico, and he held the office till 1885, when he resigned and engaged in practice in Santa Fé.

Balestier, Wolcott, author, born in Rochester, N. Y., Dec. 13, 1861; died in Dresden, Germany, Dec. 6, 1891. He was educated at Cornell University and the University of Virginia, was engaged in journalism in Rochester for a short time, and wrote his first story in 1884. After settling in New York city, he became connected with the Astor Library, editor of "Tid Bits," a humorous weekly publication, the name of which he changed to "Time," and, in 1888, the London agent for the Lovell publishing house. In 1889 he entered the publishing business on his own account as junior member of the firm of Heinemann & Balestier, of London and Leipsic, publishers of "The Review of Reviews" in London and of the "English Library," a rival of the Tauchnitz, on the Continent. He was a writer of much promise and popularity. His publications include "A Patent Philtre" (1884); "A Fair Device" (1884); a cam-

paign life of James G. Blaine (1884); "A Victorious Defeat" (1886); "A Common Story" (1891); and, in conjunction with Rudyard Kipling, a serial novel, "The Naulahka," published in the "Century" magazine (1891-'92). He had also completed a novel, "Benefits forgot," and a short story, "Reffey," both of which were announced for publication in the "Century" during 1892. Erasmus Peshine Smith, the writer on political economy and international law, was Mr. Balestier's maternal grandfather.

Barvard, John, painter, born in New York city, in November, 1814; died in Watertown, S. Dak., May 16, 1891. He showed a strong taste for drawing and painting at an early age, but was without means to take lessons. When he was about fifteen years old his father died, and he removed to Louisville, Ky., where he obtained employment in a drug store. All his leisure was applied to unaided art practice, and after a year's service in the drug store he ventured to open a studio. He worked with much care and energy, producing numerous pictures of varied character, but was not successful in selling them. He then determined to make a living by exhibiting his works, and fitted up a flatboat with which to make an art voyage down the Mississippi. In this fashion he visited many cities and towns along the river, exhibiting his paintings on his boat. While pursuing this course he conceived the idea of painting in panoramic form the entire Mississippi river. While preparing for this work he painted a panorama of Venice without having seen that city, and successfully exhibited it in the West till he lost it by the sinking of a steamboat. After losing what money he had saved in the museum business in St. Louis, he began, in 1840, his famous panorama, projected to be the largest painting in the world. He made the journey down the river in an open boat, and alone. His rifle supplied him with food a part of the time, and the proceeds of exhibitions of his work as it progressed supplied the remaining necessities. A year was spent in this way, and he then returned to Louisville to complete his work. When finished and ready for exhibition, it covered three miles of canvas. The rivermen, who had been his fast friends, advertised the wonderful feat far and wide, and the panorama was exhibited in the large cities of the United States and of Europe, and privately before Queen Victoria at Windsor Castle. While exhibiting he painted the striking scenery of the places visited, and after completing a tour of Europe he traveled extensively in Asia and Africa, and produced two other panoramas—"Pictures and Poetry of Palestine"—and a series of three paintings, "First Battle-field of History," "The Siege of Jerusalem and Destruction of the Temple," and "The Ruins of Edom." Subsequently he exhibited and lectured on his panoramas in Wood's Museum, New York city. "The Orison," one of his paintings, is said to have been the original of the first chromo made in the United States. Mr. Barvard was the author of many poems, wrote several dramas, of which "Amasis" was produced in Boston in 1864, and "Carrinia" in New York city in 1875, and published "A Description of the Mississippi River," "A Pilgrimage to the Holy Land," "The Private Life of a King," and "A Tradition of the Temple." He is also credited with having suggested to Gen. John C. Frémont the passage of Island No. 10, in the Mississippi river, during the civil war, and with preparing plans to show how it could be accomplished by means of a canal and certain bayous.

Barker, Fordyce, physician, born in Wilton, Me., May 2, 1818; died in New York city, May 30, 1891. He was graduated at Bowdoin College in 1837, and, after studying medicine with Prof. Henry I. Bowditch, in Boston, at the Bowdoin Medical School in 1841, and practiced in Norwich, Conn., till 1844. He spent the winter of 1844-'45 studying in Paris, and then resumed practice in Norwich, making a specialty of obstetrics and diseases of women. In 1846 he was elected Professor of Midwifery in Bowdoin Medical School, in 1848 was President of the Connecticut Medical Soci-

ety, and in 1850 he removed to New York city. He was one of the incorporators of the New York Medical College; was appointed Obstetrical Surgeon to Bellevue Hospital in 1852, and held the office till 1874; was a member of the medical board of that hospital for thirty-five years; and became Professor of Clinical Midwifery in the medical college of the hospital in 1860. At subsequent periods he was also consulting physician to Bellevue, St. Elizabeth's, the Maternity, the Cancer, the Women's, and the Children's Hospitals. He had a large private practice. Among his numerous publications, his works on "Puerperal Diseases" and "On Sickness" have been most widely translated. He was Vice-President of the International Medical Congress, held in London in 1881, and the first American President of the Anglo-American Society of Paris, France, in 1889. He bequeathed to the New York Academy of Medicine the greater part of his medical library.

Barnum, Phineas Taylor, showman, born in Bethel, Conn., July 5, 1810; died in Bridgeport, Conn., April 7, 1891. He received a district-school education, and was early distinguished for his quickness and accuracy in mathematics. For several years after leaving school he was engaged in mercantile and agency work. In 1835 he began his career as a showman, as he always delighted to call himself. His first venture was the exhibition of the famous Joyce Heth, a colored woman who claimed to be one hundred and sixty-one years old, and to have been the nurse of George Washington in his infancy. He had been hitherto but indifferently successful as a money maker in his various undertakings, but fortune now began to favor him, and after a series of exhibition tours he bought out several collections of wonders and curiosities and opened the American Museum in New York city in 1841. Three years afterward he went abroad with the celebrated dwarf, "Tom Thumb," with whom he gave entertainments at the English and at most of the Continental courts. In 1850 he introduced Jenny Lind to the American public, agreeing to pay her \$1,000 each for a long series of concerts, besides many personal expenses. In addition to many charity concerts she sang in ninety-five regular concerts, the total receipts of which were \$712,161.34, of which her net receipts were \$176,675.09, and Mr. Barnum's gross receipts, after paying the singer, were \$535,486.25. The marriage of Tom Thumb to Lavinia Warren, another dwarf, in Trinity Church, and the introduction to the public of Commodore Nutt and Admiral Dett, two other dwarfs, the woolly horse, the What is It, and other specialties, added largely to his popularity. For some time he conducted a museum in Philadelphia in conjunction with the one in New York. He published several books, which had a large circulation, and delivered lectures on temperance and popular subjects before crowded houses. In 1865 the American Museum was destroyed by fire. He then organized another one farther up town, and continued his popular exhibition and lecture-room attractions till burned out a second time, a few years afterward. In 1871 he opened to the public "The Greatest Show on Earth," a combination of circus and menagerie, and to this, with vast accretions, he applied the remainder of his life. His later triumphs were the exhibitions of "Jumbo," the great elephant of the London Zoological Garden, and the sacred white elephant of Siam, and the transportation and exhibition in England of his entire show. Prior to the civil war Mr. Barnum was a Democrat, but he then joined the Republican party, and in 1865-'69 was a member of the Connecticut Legislature. In 1875 he was elected Mayor of Bridgeport, and in public improvements and gifts did much for the city. He gave \$500,000 before his death to the Bridgeport Scientific and the Fairfield County Historical Societies for the erection of their new building, and he also bequeathed handsome legacies to personal friends and to numerous literary, charitable, and religious bodies.

Barrett, Lawrence, actor, born of Irish parents in Paterson, N. J., April 4, 1838; died in New York city, March 21, 1891. At a very early age he displayed evidences of great intelligence, and his mother, a hard-working woman, often carried him to school in her arms when he was too feeble to walk. He began life for himself in a dry-goods store, where he showed a taste for mimicry, and was fond of entertaining his fellow-clerks with imitations of the favorite actors of the day. His first theatrical employment was as call-boy in a Detroit theatre, at a salary of \$2.50 a week. He kept his eyes and his ears open, and studiously watched all that was going on about him, spending every spare moment over a book or a play. Sticking upon nails on the floor of his miserable garret the ends of candles he had begged from the property-man, he spent whole nights in reading.

His favorite book was an old dictionary, which he knew almost by heart, and, naturally enough, a love for philological studies distinguished him through life. At last, this earnest little boy with a preternaturally big head and bright, intelligent blue eyes attracted the attention of the manager, and, much to his joy, in 1853 he was given his first speaking part, that of Murad in "The French Spy." The character was very insignificant, but he put as much thought into it as if it had been Hamlet, and from that time his career as an actor began. In 1854 he went to Pittsburgh as a member of the Grand Opera House stock company, then under the management of Joseph Foster. For two years he played in the support of many of the leading actors and actresses of the day. His first appearance in New York was in the old Chambers Street Theatre, which had been abandoned by William E. Burton about a year before. The opening piece was "The Hunchback," Jan. 19, 1857, and he was Sir Thomas Clifford. During that engagement Mr. Barrett played many leading rôles, among them Fazio, the Stranger, Armand, Ingomar, Claude Melnotte, and Lord Townley; and he made so favorable an impression that he soon had many offers for a next season's engagement. He accepted that of Mr. Burton as promising the greatest advantages, and on March 2, 1857, he began his work at Burton's Theatre (the Metropolitan, afterward Winter Garden), making his first appearance there as Matthew Bates in Douglas Jerrold's "Time Tries All." During the season at Burton's he first met Edwin Booth, and there the two young men began a friendship which ended only with Mr. Barrett's death. Totally unlike in nature, they seemed to supplement each other, and the relationship between them was constant and cordial. While at Burton's Mr. Barrett played Florizel to Burton's Autolycus, and Fagan to Charlotte Cushman's Nancy Sikes, and he acted often with Edwin Booth. In the autumn of 1858 he became a leading actor in the Boston Museum, where he opened as Frederick Bramble in the comedy of "The Poor Gentleman," in which Mr. Warren was Dr. Ollapod and W. H. Smith Sir Robert. During his two years at the Museum he played many characters and became an established favorite. From there he went to the Howard Athenaeum, where he supported during one season Charlotte Cushman, Barry Sullivan, James H. Hackett, Edwin L. Davenport, and Charles W. Couldock. Mr. Barrett enlisted in 1861, and served for some time as captain of Company B, of the 28th Massachusetts Volunteers. Returning North,



he joined the stock company of the old Walnut Street Theatre, Philadelphia, remaining there three months, thence he went to Washington, and at the close of his season in the latter city he joined the Chestnut Street Theatre Company, Philadelphia, and supported Booth, Davenport, and other stars.

Edwin Forrest was not playing during that winter, but he frequently went to the theatre and watched Barrett with great interest, often sending for him after the play to approve of certain lines which he considered well rendered. Mr. Booth now made him an offer to support him at Winter Garden, and while he was in New York, Lewis Baker proposed to him to enter into partnership in the management of the Varieties Theatre at New Orleans. After some hesitation, Mr. Barrett accepted, thinking it would give him an opportunity to play in the standard tragic dramas; the arrangement was perfected, and Mr. Barrett began the active management of the house in conjunction with Dan Setchell, having a prosperous season of thirty weeks in 1863-'64. His starring career may be said to have begun here, for he first appeared as Richelieu, Hamlet, and Shylock. At that time Lester Wallack was playing "Rosedale" with great success in New York. Barrett bought from the author the American provincial rights to the comedy, and when the Varieties was destroyed by fire he decided to set out on a starring trip, appearing as Elliot Grey at Pike's Opera House, in Cincinnati, in the autumn of 1864. In 1866 he went to England, and again in 1867, when he presented Hamlet for one week in Liverpool. On Feb. 17, 1868, he opened at Maguire's Opera House, San Francisco, where he played eleven weeks. While there he met William C. Ralston and other capitalists who agreed to build a magnificent theatre if he would undertake its management jointly with John McCullough. Mr. Barrett accepted their offer, and in 1868 he again crossed to England, returning in December, when he went overland to California, a very severe trip, during which he nearly lost his life. The California Theatre was opened under the management of Barrett and McCullough Jan. 18, 1869. After an unusual success of twenty months, he sold his half-interest to Mr. McCullough, and began starring again in 1870, opening on the 15th of August at Niblo's Garden. In January, 1871, Mr. Booth engaged him to play opposite characters in the great productions given in Booth's Theatre corner of 23rd Street and Sixth Avenue, New York. After sixteen weeks Mr. Booth withdrew, and Mr. Barrett prolonged the season with a great revival of Shakespeare's "A Winter's Tale," in which he appeared as Leontes. This was followed, June 5, 1871, by the first production in this country of "The Man o' Airlie," a play with which he was always closely identified. The Varieties Theatre had been rebuilt, Mr. Barrett accepted its management, and it was brilliantly opened on Dec. 4. This venture succeeded so well that he felt willing to leave his business in the hands of his subordinates and accept Mr. Booth's offer to act in "Julius Cæsar," which was presented at Booth's Theatre, Dec. 25, 1871, and ran nearly three months, although Mr. Barrett retired on Feb. 17, 1872. The cast included Edwin Booth as Brutus, Lawrence Barrett as Cassius, Frank C. Bangs as Mark Antony, and Miss Pateman as Portia. Mr. Barrett reappeared in New Orleans as Hamlet March 4, 1872. Although he was meanwhile obliged to assume the whole financial responsibility of the Varieties, he continued his starring tour in the autumn of 1872, retaining a five years' lease of the New Orleans house. The season there was disastrous, and the losses were over \$57,000, which it took him many years to pay. In 1873 he reappeared at the California Theatre, and in 1873-'74 he continued his tours, playing in the different States. A revival of "Julius Cæsar" was given at Booth's Theatre on Dec. 27, 1875, and lasted till April 8, 1876, in which Mr. Barrett appeared as Cassius to the Brutus of Edwin L. Davenport. Next he played "King Lear" and "Daniel Druce," which latter he presented at Booth's

Dec. 25, 1876. On Oct. 11, 1877, he produced at Cincinnati a play by William D. Howell's called "A Counterfeit Presentiment." His next important production was "Yorick's Love," translated from the Spanish by Mr. Howells, and given at the Park Theatre, New York, Dec. 20, 1880. He presented "Pendragon" at Chicago, Dec. 5, 1881. On Sept. 14 of the same year he bought out "Francesca da Rimini" at the Chestnut Street Theatre, Philadelphia, and he also presented this play at the Star Theatre, New York, and acted the part of the Hunchback, Lanciotto. During the season of 1883-'84 he appeared in Boston and the large cities of the Union, and on April 14, 1884, he began an engagement of seven weeks at the Lyceum Theatre, London. During the following seasons he was actively engaged throughout the United States, when he restored to the stage Brownings "A Blot in the Scutcheon," and was seen as Benedick, Don Felix, Alfred Evelyn, Raphael, David Garrick, Cardinal Wolsey, and kindred characters. At Buffalo, on Sept. 12, 1887, he began his first joint engagement with Edwin Booth, one of the most successful theatrical enterprises, not only in a financial, but in an artistic way, in the history of the drama in this country. They first appeared together in New York at the Academy of Music, Dec. 20, 1887, in "Julius Cæsar." The next year they appeared at the Fifth Avenue Theatre, bringing out "The Merchant of Venice" and "Othello." The following season the two actors separated, although Mr. Booth was still under Barrett's management. During that time Mr. Barrett brought out "Ganelon" in Chicago and other cities, but was obliged to give up playing on account of very poor health. Mr. Barrett's last production of a new play was "Guido Ferranti," by Oscar Wilde, which ran from Jan. 26 to Feb. 14, 1890, at the Broadway Theatre, New York. Mr. Barrett's last appearance was on March 18, 1891, at the same house, in the character of Adrian du Mauprat to the Richelieu of Mr. Booth. He was compelled by illness to retire at the end of the third act, and he died two days later at the Windsor Hotel. He was buried at Cohasset, Mass. Lawrence Barrett was a man of intellect, not of genius; he was a good actor, not a great one. He loved his art and respected it, and he won for himself the respect and esteem of every member of his profession with whom he came in contact. He was an admirable and a generous manager—he spent great sums of money in the wise and correct mounting of the tragedies he presented; and no man in his generation, in any land, has done so much for the stage in the way of encouraging dramatic authorship. His greatest part, perhaps, was that of Cassius; the most touching and tender, that of the Man o' Airlie. His Hamlet was vigorous, intelligent, and consistent. His Lanciotto, his Yorick, his Shylock, his Richelieu, his Grangoire, were the results of the closest study, and they were always effective and impressive. As he himself said of Edwin Forrest, "The actor is a sculptor who carves his image in snow; he leaves nothing but the memory of his work behind him." No printed words can give any idea of what Mr. Barrett was as an artist, and his manly and independent character, his uniform devotion to duty, his high sense of honor, his enthusiasm for his profession, his courtesy, his dignity, and his personal charm will live no longer than his art in the memory of men. His only lasting monument perhaps, will be his scholarly "Life of Edwin Forrest" (Boston, 1881) and his other published but scattered writings.

Barton, William B., theatrical manager, born in Woodbridge, N. J., in 1831; died in New York city, June 13, 1891. He was a graduate of the College of New Jersey; entered the national army in July, 1861, as lieutenant-colonel of the 48th New York Volunteers, which was recruited in Brooklyn; succeeded the Rev. James H. Perry as colonel on the death of the latter; distinguished himself especially in the battles around Richmond, in one of which he was shot through both lungs; and was mustered out of the service in Decem-

her, 1864, with the rank of brigadier-general. After the close of the war he engaged in business in Pittsburg, building the first street railroad and laying the first block pavement, till the failure of a bank forced him into bankruptcy. He then went to San Francisco, and in 1879 became manager of the California Theatre. While there he was the first manager in the country to produce "Fatinitz." After his first season, he managed a dramatic tour for Joseph K. Emmet and a lecture tour for Col. Robert G. Ingersoll, and then, returning to New York, was employed editorially on the "Mail and Express." Subsequently, in conjunction with L. E. Miles, he built the Bijou Theatre, where Henry E. Dixey had his long run with "Adonis," and managed the successful play "Lost in New York."

Battershall, Jesse Park, chemist, born in Troy, N. Y., May 26, 1851; died in Poughkeepsie, N. Y., Jan. 12, 1891. He pursued the study of chemistry in the School of Mines, Columbia College, and in Germany. In 1873 he received the degree of Doctor of Natural Sciences from the University of Tübingen, and afterward took a course of lectures with Prof. Marignac at Geneva. On returning to the United States he was employed for some time as an analytic and consulting chemist in New York city, and in 1879 he was appointed chemist at the United States Laboratory in New York, which office he held until his death. He translated Naquet's "Legal Chemistry" (New York, 1876), and was author of "Adulteration of Food and Drink" (New York, 1886) and of numerous contributions to scientific publications.

Beardsley, Eben Edward, clergyman, born in Stepany, Conn., in 1807; died in New Haven, Conn., Dec. 22, 1891. He was graduated at Washington (now Trinity) College, Hartford, in 1832; was ordained deacon in the Protestant Episcopal Church, Aug. 11, 1835, and priest, Oct. 24, 1836; was rector of St. Peter's Church, in Cheshire, in 1836-48; and was rector of St. Thomas's Church, New Haven, from 1848 until his death. Dr. Beardsley had been a deputy to the General Convention of his Church from Connecticut since 1869, a member of the standing committee in his own diocese since 1860, and President of the House of Clerical and Lay Deputies in the General Conventions of 1880 and 1883. His publications include "The History of the Episcopal Church in Connecticut from the Settlement of the Colony to the Death of Bishop Brownell in 1865" (2 vols., 1865-'68); "The Life and Correspondence of Samuel Johnson, D. D., Missionary of the Church of England in Connecticut, and First President of Kings (now Columbia) College" (1874); "The Life and Times of William Samuel Johnson, First Senator in Congress from Connecticut and President of Columbia College" (1876); and "The Life and Correspondence of the Right Rev. Samuel Seabury, First Bishop of Connecticut and of the Episcopal Church in the United States" (1881). At the time of his death he was putting through the press a volume of his discourses.

Belcher, Nathan, manufacturer, born in Griswold, Conn., June 23, 1818; died in New London, Conn., June 3, 1891. He was graduated at Amherst College in 1832 and at the Cambridge Law School in 1835, was admitted to the bar in 1836, and practiced in Clinton, Conn., till 1846. He then relinquished his profession, removed to New London, and engaged in manufacturing. The same year he was elected to the State Legislature; in 1847 was re-elected; and in 1850 was elected to the State Senate. He was Democratic presidential elector-at-large in 1852, and member of Congress from the 2d Connecticut District in 1853-'55.

Bennett, Charles Wesley, educator, born in East Bethany, N. Y., July 18, 1828; died in Evanston, Ill., April 17, 1891. He was graduated at Wesleyan University in 1852, studied archaeology and ecclesiastical history in Berlin University, was ordained a minister of the Methodist Episcopal Church in 1862, was principal of the Genesee Wesleyan Seminary in Lima, N. Y., in 1864-'66, and made a tour of Europe and the East in 1866-'69. In 1871 he became Professor of

History and Logic in Syracuse University; in 1872-'76 he was art editor of "The Ladies' Repository," and subsequently of "The National Repository"; and in 1885 he was elected Professor of Historical Theology in the Garrett Biblical Institute, where he remained until his death. Dr. Bennett was a prolific writer, and in 1887 made an extended tour in Europe, visiting many of the most important libraries and museums in the interest of his great literary life work, "Christian Art and Archaeology of the First Six Centuries." He edited the Methodist subjects in the revised edition of "The American Cyclopaedia," and published a "Digest of the Laws and Resolutions of Congress relative to Pensions, Bounty-lands, Pay of the Army, etc." (1854); "History of the Philosophy of Pedagogics" (1877); and "National Education in Italy, France, Germany, England, and Wales" (1878).

Berry, James Romeyn, clergyman, born in Hackensack, N. J., in 1826; died in Asbury Park, N. J., June 5, 1891. He was a graduate of Rutgers College and of the New Brunswick Theological Seminary; and had held pastoral relations in Piermont and Fishkill, N. Y., in Jersey City and Montclair, N. J., and later in Rhinebeck, N. Y. For many years he was an earnest worker in the movement to bring about a union of the two branches of the Reformed Church in this country. At the time of his death he was attending the session of the Synod of the Reformed Church in America, and had just retired from the presidency of that body.

Bicknell, George Augustus, jurist, born in Philadelphia, Pa., Feb. 6, 1815; died in New Albany, Ind., April 11, 1891. He was graduated at the University of Pennsylvania, and in 1832 at the Yale Law School; was admitted to the bar in Albany, N. Y., in 1836; and, after practicing in New York city till 1846, removed to Scott County, Ind. In 1848 he was elected county prosecutor, in 1850 circuit prosecutor, and in 1862 judge of the 2d Judicial District. By re-elections he held the latter office till 1876, when he was elected member of Congress from the 3d Indiana District as a Democrat, and in 1878 he was re-elected. While in Congress he served as Chairman of the Committee on the Electoral Count, and as member of the Foreign Affairs and other committees. In 1881 he was appointed Commissioner of Appeals in the Supreme Court of Indiana, which office ceased with the completion of its work in 1885. Judge Bicknell was elected judge of the circuit court of Indiana in 1889, and held the office at the time of his death. During his vacations while on the bench he was Professor of Law in the State University from 1861 till 1870. He was the author of "Bicknell's Civil Practice" and "Bicknell's Criminal Practice."

Bigelow, Allen Gilman, journalist, born in Buffalo, N. Y., in 1854; died in Asheville, N. C., Aug. 8, 1891. When nineteen years old he began a promising literary career as a writer on the Buffalo "Bohemia," published by his brothers, from which he went to the Buffalo "Telegraph" as associate editor. Subsequently he was connected with the Buffalo "Express" and the Lockport "Journal." While engaged in journalism, he became a contributor to "Golden Days," "St. Nicholas," "The Atlantic Monthly," "The North American Review," and other periodicals, and wrote many poems. He was also a musician of much natural ability.

Bigelow, Robert B., manufacturer, born in North Haven, Conn., May 16, 1834; died in New Haven, Conn., Oct. 12, 1891. He received an academical education, removed to New Haven, and was apprenticed to the machinist's trade in 1851. Entering the machine shops of Ives and Smith, he was successively journeyman, foreman, and proprietor. In 1861 in association with Henry Bushnell, inventor of the compressed-air motor, he took a Government contract for supplying gun parts for 800,000 Springfield muskets, on which he was engaged three years, with a force of 200 men. In 1867 the increase of business caused a removal of his works to Grapevine Point. In politics he was always a Republican. He was appointed by the Com-

mon Council of New Haven a member of the Board of Supervisors in 1872, and by the Mayor, a member of the Board of Fire Commissioners in 1874. In 1875 he was elected to the State Legislature; in 1878 he became Mayor of the city; and in 1880 Governor of the State. For many years he was engaged almost exclusively in the manufacture of steam boilers.

Bocock, Thomas S., lawyer, born in Buckingham County, Va., in 1815; died in Appomattox County, Va., Aug. 5, 1891. He was graduated at Hampden-Sidney College, studied law, was attorney for Appomattox County in 1845-46, and was a member of the Virginia House of Delegates for several years. In 1846 he was elected to Congress, where he sat by successive re-elections till Virginia adopted the ordinance of secession, when he resigned. In 1861 he was elected to the Confederate Congress, and on Feb. 18, 1862, he was chosen Speaker of the House. For many years prior to his death he lived in retirement, a victim of paralysis.

Botta, Anne Charlotte Lynch, author, born in Bennington, Vt., Nov. 11, 1815; died in New York city, March 23, 1891. She was educated in Albany, N. Y.; lived several years in Providence, R. I., where she began her literary career; removed to New York



city about 1842; and married Vincenzo Botta, then Professor of Italian Language and Literature in the University of the City of New York, in 1855. From the time of her marriage till her death her house was the center of a literary circle. During the Franco-German War, in 1870-71, she prepared an album of autographs, photographs, and original sketches by famous artists in her possession as a contribu-

tion to the fund for the relief of the suffering women and children in Paris. This album sold for \$5,000, and, as the war closed before the fund was completed, the money was given to the French Academy as the basis of a fund to provide a prize for the best essay by a woman on "The Condition of Women," to be awarded every five years. In the award of 1888 the Academy voted the medal of honor to the Queen of Roumania, for her "*Pensées d'une Reine*," and voted \$500 each to Mme. Arvede Baride and Mme. Anas Segalas. Mrs. Botta's literary work comprised "The Rhode Island Book" (Providence, 1841); a collection of poems, illustrated by Brown, Darley, Durand, Huntington, and other artists (New York, 1848; revised ed., 1884); and "A Hand-book of Universal Literature" (New York, 1860). She also published "Leaves from the Diary of a Recluse" in "The Gift" (1845). Her poems "Paul at Athens," "Webster," "Books," and "Wasted Fountains" are among her best. She published many essays, reviews, and criticisms, was a sculptor of much merit, and promoted the establishment of Barnard College for women.

Brady, John Riker, jurist, born in New York city in 1822; died there, March 16, 1891. He was a son of Thomas S. Brady, a lawyer, but better known as an educator, and a brother of James T. Brady, for many years the leader of the bar of New York. He studied law, was admitted to the bar in 1844, and practiced first in his father's office and afterward in partnership with his brother. In 1856 he was elected a justice of the New York Court of Common Pleas; in 1869 he was promoted to the bench of the Supreme Court of the State; and in 1877, when his term was expiring, he was honored by a unanimous re-election, each political party nominating him. He had occupied the judicial bench for thirty-five years continuously. Judge Brady was a man of much eloquence

and wit, and for many years was the most popular after-dinner speaker in the State. At midnight of the day on which President Garfield was shot, and before the extent of his injuries was known, Judge Brady administered the oath of the presidential office to Vice-President Arthur in New York.

Bragg, Walter L., lawyer, born in Lowndes County, Ala., Feb. 25, 1838; died in Spring Lake, N. J., Aug. 21, 1891. He was graduated at Harvard in 1858, and settled in Camden, Ark., to practice law. He served in the Confederate army through the civil war, chiefly with the Army of Tennessee, and attained the rank of captain. After the close of the war he settled in Marion, Ala., and resumed the practice of law, removing in 1871 to Montgomery. In 1874-77 he was chairman of the Democratic Executive Committee of Alabama; in 1876 he was a delegate to the National Democratic Convention at St. Louis, where he was appointed a member of the National Committee for his State; in 1880 he was the presidential elector-at-large of Alabama; in 1881 was elected President of the Alabama Railroad Commission by the Legislature; in 1887 was appointed a member of the new Interstate Commerce Commission; and in 1889 he was reappointed. He was also first President of the Alabama State Bar Association.

Breckinridge, Samuel Miller, jurist, born in Baltimore, Md., Nov. 8, 1828; died in Detroit, Mich., May 28, 1891. He was educated in the College of New Jersey and in Center College, Kentucky; was graduated in the Law School of Transylvania University, at Lexington, Ky.; and in 1850 made his permanent home in St. Louis, Mo. He was a member of the State Legislature in 1854 and 1855, was elected judge of the Circuit Court of Missouri in 1859, and was a strong Union man throughout the civil war and the particularly trying period of conflict within his State. After the war he was influential in the counsels of the Republican party, but would accept no political office. Judge Breckinridge was probably most widely known from his connection with the Presbyterian Church. He was chosen an elder in the Second Presbyterian Church in St. Louis in 1871; was appointed a member of the General Assembly's committee on internal relations to meet a similar committee of the Presbyterian Church in America, in 1873; was a member of the General Assembly that met in St. Louis in 1875; and was a member of the General Assembly's committee on the revision of the "Book of Discipline" from 1878 till the final report in 1882. He was also a member of the General Assemblies of 1881 at Buffalo, 1882 at Springfield, Ill., 1883 at Saratoga, and 1891 at Detroit. In the latter body he was conspicuous in his support of the report of President Patison's committee against the Rev. Charles A. Briggs, D. D. On May 28 he was urged by many delegates to make a formal announcement of his legal views on the controversy, as he was known to have studied the question closely. After a long and lucid speech, he began concluding with "I feel that I have discharged my duty faithfully, and I ask you to excuse me from further—" when he fell to the floor and expired.

Brentano, Lorenzo, lawyer, born in Mannheim, Baden, Germany, Nov. 4, 1813; died in Chicago, Ill., Sept. 18, 1891. After receiving a classical education, he studied jurisprudence at the universities of Heidelberg and Freiburg, and was graduated with the degree of LL. D. He settled in Berlin to practice, and one of his noted cases was the state trial of Herr von Struve for high treason, in which he was the leading counsel for the defense. On attaining the legal age he was elected to the Chamber of Deputies, where he allied himself with the Liberal or Opposition party. In 1848 he was elected to the Frankfurt Parliament, and in the following year, on the flight of the Grand Duke of Baden in consequence of the revolution, he was chosen President of the Provisional Republican Government. The defeat of the revolutionary army was followed by a sentence to imprisonment for life pronounced against Mr. Brentano and other leaders. But he had fled to the United States, where he settled

in Kalamazoo County, Mich., and engaged in farming. In 1869 he removed to Chicago and was admitted to the bar, but he soon relinquished that profession for journalism, becoming editor-in-chief and chief proprietor of the "Illinois Staats Zeitung." In 1862 he was elected to the State Legislature; for five years he was President of the Chicago Board of Education; and in 1868 he was a Republican presidential elector. He took advantage of the granting of an amnesty to all participants in the revolution by revisiting his native land in 1869 and remaining there two years. In 1872 he was appointed United States consul at Dresden, where he served till April, 1876, and on his return to Chicago was elected to Congress from the 3d Illinois District as a Republican the same year. After serving one term he devoted himself to historical and literary work till 1884, when paralysis incapacitated him for further labor.

Brooks, David, electrician, born in Brooksville, Conn., Jan. 26, 1820; died in Philadelphia, Pa., May 30, 1891. He received a collegiate education, and when twenty years old was appointed an instructor in mathematics in the United States Military Academy. While employed there he became interested in the experiments of Samuel F. B. Morse and others in magnetic telegraphy. After five years' service in the academy, he resigned to engage in the development of the new system of transmitting messages, and the same year (1845), in conjunction with James D. Reid, he built the first commercial line of telegraph in America, and received the first message sent over it. His line was constructed between Lancaster and Harrisburg, Pa. In the following year he built the line across the Alleghany mountains, connecting Philadelphia with Pittsburg, and in 1847 he made the first repeater. Three years afterward, by appointment by the United States Court, he prepared an expert description of the rival Morse and Bains systems of telegraphy. In 1851 he went to Mexico and built the first telegraph line in that country, between Vera Cruz and the city of Mexico, in six months; in 1852 he was employed by the Pennsylvania Railroad Company to develop and operate its lines from Pittsburg; and in 1854 became superintendent of the Atlantic and Ohio Telegraph Company. When this company was absorbed by the Western Union in 1862 he was appointed district superintendent in New York city, and he remained with the Western Union till 1867; he then resigned, and passed the remainder of his life in inventing improvements in the telegraph and telephone services. He invented and developed the system of underground conductors, the improved insulators, and the insulation of inductive coils and transformers; and discovered the insulating properties of mineral oils, paraffine, and resin oil.

Brown, Joseph Bullock, physician, born in New York, July 26, 1822; died in Albion, N. Y., Oct. 21, 1891. He was appointed an assistant surgeon in the United States army June 29, 1849; was promoted captain and assistant surgeon June 29, 1854, major and surgeon July 4, 1861, and lieutenant-colonel and surgeon June 30, 1862; was brevetted lieutenant-colonel and colonel March 13, 1865, for faithful and meritorious services during the war, and brigadier-general Sept. 28, 1866, for distinguished services at Fort Columbus, New York harbor, during the cholera epidemic; and was retired June 30, 1882. During the civil war he served chiefly with the Army of the Potomac and the Army of the Cumberland. He was appointed President of the United States Medical Examining Board in New York city in 1873, and held the office till his retirement.

Brown, Thomas M., lawyer, born in New Paris, Ohio, April 19, 1829; died in Martinsville, Ind., July 17, 1891. He received a common-school education, removed to Indiana in 1844, and was admitted to the bar in Winchester, Ind., in 1849. In 1855 he was elected prosecuting attorney of the 13th Judicial District, and was twice re-elected. In 1861 he became Secretary of the Indiana State Senate, and in 1863 a State Senator. Subsequently he organized the 7th

Indiana Volunteer Cavalry, entered the national army as its lieutenant-colonel, was promoted colonel and commissioned brevet brigadier-general, and served till the close of the war. In April, 1862, he was appointed United States Attorney for the district of Indiana, and held the office till Aug. 1, 1872, when he resigned to enter on the canvass for Governor as a Republican. He was defeated by Thomas A. Hendricks. In 1876 he was elected to Congress from the 6th Indiana District, and served seven consecutive terms, declining a nomination for the eighth.

Buckland, Cyrus, inventor, born in Springfield, Mass., Aug. 19, 1799; died there Feb. 26, 1891. In 1828 he went to work at gun-making in the United States National Armory in Springfield, became master mechanic, and retired in 1856 that he might reap some profit from his numerous patents. He perfected the lathe for turning out gun-stocks, carried out Thomas Warner's idea of interchangeable parts to a gun and machinery, and obtained, among others, patents for machines to manufacture the upper barrels of muskets, to finish the cone, to mill screws, to bore and turn gun barrels, and to rifle muskets.

Bundy, Jonas Milla, journalist, born in Columbia, Coos County, N. H., in 1835; died in Paris, France, Sept. 8, 1891. He removed with his parents to Beloit, Wis., when a child, was graduated at Beloit College in 1853, and, after studying law at Cambridge and Milwaukee, became a reporter on the "Milwaukee Wisconsin." At the beginning of the civil war he entered the national army, was appointed aide on the staff of Gen. John Pope with the rank of major, and served till the close of the war. He then settled in New York and became musical and literary critic on the "Evening Post." In 1868 he was one of the founders of the "Evening Mail," of which he became editor-in-chief, and on the consolidation of the "Evening Mail" and the "Evening Express" he retained the chair. In 1887 the "Mail and Express" was sold to Elliott F. Shepard, who continued Major Bundy at the head of the editorial department. Major Bundy went to Europe in July, 1891, for a vacation, and died suddenly in Paris. He was the author of a "Life of James A. Garfield."

Burchard, Samuel Dickinson, clergyman, born in Steuben, N. Y., Sept. 6, 1812; died in Saratoga, N. Y., Sept. 25, 1891. He was graduated at Center College, Danville, Ky., in 1836. After spending two years in studying theology and in lecturing on temperance, slavery, and religious topics, he was licensed to preach, and on May 1, 1839, he was installed pastor of the 13th Street Presbyterian Church in New York city. He remained in this charge till 1879, also serving a part of the time as Chancellor of Ingham Seminary, Le Roy, N. Y. The year after resigning he became pastor of the Murray Hill Presbyterian Church, and served it till 1885, when he retired. During the presidential canvass of 1884 Dr. Burchard gained wide notoriety by an expression made in a speech on Oct. 29, when, with a numerous company of clergymen, he made a formal call on James G. Blaine at the Fifth Avenue Hotel. In the course of his remarks extending a welcome to Mr. Blaine in behalf of the visitors, he said: "We are Republicans, and don't propose to leave our party and identify ourselves with the party whose antecedents have been rum, Romanism, and rebellion. We are loyal to our flag; we are loyal to you." The Democratic managers made the most of the expression in Roman Catholic circles, and it was believed that it had considerable influence in causing the defeat of Mr. Blaine.

Burgess, Edward, naval architect, born in West Sandwich, Mass., June 30, 1849; died in Boston, Mass., July 12, 1891. He was graduated at Harvard in 1871; appointed secretary of the Society of Natural History of Boston in 1879; made instructor in entomology in Harvard in 1879; and established himself in business as a naval architect and yacht broker in Boston in 1883. He had studied yacht-building during his foreign travels, and many of his suggestions had been adopted by the Eastern Yacht Club of Bos-

ton. The first boat which he built as a professional designer was the cutter "Rondina," and the first to make him famous was the sloop "Puritan," which vanquished all competitors in this country and defeated the celebrated English cutter "Genesta" in the races for the "America's" cup in 1855. For another international contest in 1886 he built the "Mayflower," which defeated the English challenger "Galatea," and a year later he constructed the "Volunteer," which defeated the English "Thistle" for the cup. His services were now in great demand among wealthy yachtsmen, who were becoming divided in opinion as to the superiority of the small center-board yachts over the regulation cutters; and the fact that Mr. Burgess had declared his ability to construct a double-keel boat capable of defeating even the victorious "Volunteer" intensified the general regret at his death. The other Burgess boats included the racers "Sachem," "Titania," "Papoose," "Balloon," "Nymph," "Wraith," "Sprite," "Saracen," "Rosalinga," "Chiquita," "Marguerite," and "Vandal"; the steam yachts "Hanniel" and "Sheerwater"; many fishing schooners, as the "Fredonia"; and a large number of smaller boats, all noted for extraordinary speed. In 1887 he was appointed a member of the United States Naval Board, to award prizes for the designs of cruisers and battle-ships, and in 1888 permanent chairman of the Board of Life-saving appliances in the United States Life-saving Service.

Burnham, Thomas Oliver Hazard Perry, bookseller, born in Essex, Mass., in 1813; died in Boston, Mass., Nov. 14, 1891. He began peddling books, papers, songs, and fruit along the wharves and streets when a small boy, subsequently went to Boston and became one of the best known dealers in old, curious, and rare literature in the country. To the surprise of all who knew him he left an estate valued at about \$1,000,000, and greater surprise was created by the discoveries following the filing of his will. He bequeathed \$40,000 to his native town; \$20,000 to the Massachusetts Institute of Technology; \$10,000 to Tufts College; \$5,000 to the Massachusetts Agricultural College; \$10,000 to the Home for Aged Men in Boston; \$5,000 each to the Children's Hospital, the Lying-in Hospital, the Massachusetts Asylum for the Blind, the State School for Idiotic and Feeble-minded Children, the Boston Asylum and Farm-school for Indigent Boys, the Washingtonian Home in Boston, Perkins Institute, and the Boston Provident Association; and smaller sums to institutions in and near Boston—the bequests aggregating nearly \$500,000.

Burwell, Theodotus, jurist, born in Oxford, Conn., in 1805; died in Spuyten Duyvil, N. Y., April 18, 1891. He was graduated at Union Hill College in 1830, taught in Capt. Partridge's military school in Buffalo for one year, and on the relinquishment of the school by the proprietor, he continued it as an academy. While thus employed he applied his spare time to reading law. He was admitted to the bar in 1835, and, besides attaining success in private practice, was trustee of a large tract of land on the north side of Buffalo harbor from 1838 till 1846. He remained in Buffalo till 1855, and during this period served two terms as counsel to the municipal corporation; was county judge of Erie County, and was defeated as Democratic candidate for State Senator. He founded the Buffalo "Courier." In 1855 he removed to New York city and entered into partnership with James W. Nye, afterward Governor and United States Senator in Nevada. He followed corporation and trust practice till he was nearly eighty years old, and then retired to his farm in East Yonkers, N. Y.

Butler, David, lawyer, born near Linton, Green County, Ind., Dec. 15, 1829; died near Pawnee City, Neb., May 25, 1891. He was the eldest of ten children, and the death of his father, before David had attained his majority, threw upon him the care of his mother, brothers, and sisters. He received a limited district-school education, successively engaged in farming, mercantile business, and cattle dealing, and acquired a considerable fortune, which he lost in the panic of

1857. In 1859 he removed to Pawnee City, Neb., and in ten years accumulated \$100,000 in mercantile business, cattle dealing, and the practice of law, he having been admitted to the bar in 1861. In 1858 he was a Republican nominee for the Indiana Senate, but withdrew from the canvass before the election; in 1861 he was elected a member of the Nebraska Territorial Legislature; in 1863 went to the Territorial Senate; in 1866 he was elected by a majority of 145 votes the first Governor of the State; and in 1868 he was re-elected by a much larger majority. While serving his second term, he was an unsuccessful candidate for the United States Senate, and in 1870 he was elected Governor for the third time. After ten years' retirement from active political life, he was elected to the State Senate as an Independent, and in 1888 he was the unsuccessful candidate of the Union Labor party for Governor. The removal of the State Capitol from Omaha to Lincoln, and the planning and beautifying of the Capitol, university, and asylum grounds were carried out during his administration.

Cameron, Charles S., lawyer, born in Port Stanley, Canada, May 29, 1825; died in Chicago, Ill., May 13, 1891. He studied law in his native town; went to Memphis, Tenn., in 1850, and practiced there a year; and in 1851 settled in Chicago. While following his profession he also entered political life, and became a warm supporter of John Wentworth. In 1861 he aided in organizing the 9th Illinois Cavalry, and accompanied it to the field as a captain. His service was mainly in the extreme South, but for some time he was stationed in Memphis. At the close of the war he was elected to Congress as a Republican. Before the close of his term in Congress he revisited Chicago, and decided to settle there again. After doing so he re-entered political life, but as a Democrat. Mayor Colvin appointed him assistant city attorney, and Mayor Carter Harrison gave him two terms as city prosecutor. He then resumed general practice, and recently was assistant to City Prosecutor Sugg. He was President of the Illinois Veterans' Association.

Camp, Frederick E., military officer, born in Middletown, Conn., in 1832; died there, Oct. 8, 1891. He became 2d lieutenant in the 24th Connecticut Volunteers Nov. 18, 1862; was promoted 1st lieutenant April 6, 1863; commissioned captain in the 29th Connecticut Volunteers Jan. 28, and major Nov. 24, 1864; and promoted lieutenant-colonel of his regiment Jan. 1, 1865. On the reorganization of the regular army he was appointed 2d lieutenant and promoted 1st lieutenant 14th United States Infantry, Feb. 28, 1866; was transferred to the 32d Infantry Sept. 21 following; promoted captain Dec. 12, 1869; assigned to the 2d Infantry June 1, 1871; and resigned in 1875. He was wounded at Port Hudson in June, 1863. After leaving the army he was pay-master-general of Connecticut under Gov. Bigelow, and adjutant-general under Gov. Lounsbury. For many years he was a member of the Republican State Executive Committee.

Campbell, Jabez Pitt, clergyman, born in Sussex County, Del., Feb. 5, 1815; died in Philadelphia, Pa., Aug. 9, 1891. Both of his grandfathers were engaged in the Revolutionary War, and his father became a Methodist preacher among the colored people. Though colored and brought up among slaves, Jabez was never a slave himself. When he was a small boy his father offered him as security for a mortgage on a boat with which to make his living at fishing in Delaware Bay. After a while business became dull, and the creditor began proceeding to foreclose the mortgage, Jabez, overhearing the plans, ran away and found people willing to befriend him in Philadelphia. He soon learned to read and write, then studied for the Methodist ministry, and in 1837 was licensed to preach. As a pastor he was successful in Philadelphia, Baltimore, and several Southern cities. In 1864 he was consecrated the eighth bishop of the African Methodist Episcopal Church by the General Conference in Philadelphia, and for many years his field of labor

was in the Southern and Southwestern States. In 1887 he was designated as Bishop of North Carolina, Virginia, and Maryland. Bishop Campbell had traveled in California, Mexico, Central America, England, Ireland, Scotland, Wales, and France, chiefly in the interest of his Church; was a fraternal delegate of the African Methodist Episcopal Church to the British Wesleyan Methodist Conference at Birmingham; presided over the Centennial Conference of the Methodist Episcopal Church in 1884; was a member of the Evangelical Alliance; and was president of the educational department of his Church.

Campbell, Tanis G., clergyman, born in Middlebrook, N. J., April 1, 1812; died in Allston, Mass., Dec. 4, 1891. He was educated by a white friend in Babylon, L. I., till he was eighteen years old; was then urged to go to Africa as a missionary; but, declining, began his career as an antislavery lecturer, and declared that he would never leave the United States till every slave was free. He united with the African Methodist Episcopal Church; removed to New Brunswick, N. J., in 1832, and formed an anti-colonization society; and was several times mobbed while preaching or lecturing. In 1841-45 he was active in establishing schools for colored children in New York, Brooklyn, Williamsburg, and Jersey City; and for several years was a "conductor" on the "underground railway," aiding many slaves who had escaped to the North. After the occupation of Charleston, S. C., he was appointed military governor of the sea islands of Georgia. There he established schools and a government, at the head of which he remained for two years, when he was removed by Gen. Tilson. Under the reconstruction act of Congress he was appointed a registrar for the 2d Senatorial District of Georgia, and subsequently he was elected to the State Constitutional Convention and to the State Senate. In 1874 he left Georgia with his family under pressure of political troubles, and lived in Washington, D. C., till about 1881, when he removed to Boston, where he engaged in missionary work.

Cannon, Anthony (better known as TONY HART), actor, born in Worcester, Mass., July 25, 1855; died there, Nov. 4, 1891. When a mere child he went on the minstrel and variety stage in song and dance parts, and with his fine voice and graceful manners soon became widely popular. In 1871 he formed a partnership with Edward Harrigan, and the two began traveling together, giving unique character sketches. Their first notable success was in "The Little Fraud," in which Cannon acted the part of a girl. In July, 1875, they began a tour as stars, with the play "The Doyle Brothers," and in the following year they took the Theatre Comique in New York city, and there played several seasons. At this house they began their memorable "Mulligan Guards" series, which was presented with great success. On Aug. 29, 1881, they opened a new theatre on Broadway with the play "The Major," which had been specially written for them. Here they also presented "Squatter Sovereignty," "McSorley's Inflation," "Cordelia's Aspirations," "Investigation," "McAllister's Legacy," and other new plays. Soon after the burning of this theatre, on Dec. 23, 1884, the partners separated, and Cannon, whose health had become impaired, was given a benefit at the Academy of Music, the proceeds of which were nearly \$8,000. For three years before his death he was afflicted with paresis.

Cantwell, Edward Payne Chrysostom, lawyer, born in Charleston, S. C., Dec. 22, 1825; died in St. Simon's Island, Ga., April 11, 1891. He was graduated at the Cambridge Law School in 1846; was appointed a 2d lieutenant in the 12th United States Infantry in 1847; served in the Mexican War, and was promoted 1st lieutenant; and on April 15, 1861, was appointed adjutant-general of North Carolina. Soon afterward he went to the front as lieutenant-colonel of the 2d North Carolina Volunteers. In 1862 he was promoted brigadier-general and appointed civil and military governor of Norfolk and Portsmouth, Va.; in 1863 became lieutenant-colonel of the 4th North Carolina

Cavalry; and in 1864 was appointed colonel of his regiment and presiding judge of the 3d Corps of the Confederate Army of Northern Virginia. After the war he was elected judge of the city court of Wilmington, N. C., appointed solicitor of the 4th Judicial District of North Carolina, and elected a State Senator. He retired from public life about 1878, spent most of his time thereafter in teaching, and had resided in Urica, N. Y., since 1888.

Carlin, John, painter, born in Philadelphia, Pa., June 15, 1813; died in New York city, April 23, 1891. He was deaf and dumb from birth; was graduated at the Pennsylvania Institute for the Deaf and Dumb in 1825; studied drawing and painting in New York city in 1833-34, and in London and Paris in 1838-40; and made his permanent residence in New York city in 1841. For several years he painted miniatures on ivory, subsequently turning to landscape and genre work. He was successful in each branch of the art, and contributed largely to the exhibitions of the National Academy and the Artists' Fund Society. Among his paintings were "The Flight into Egypt" and "The Village Gossips" (1880); "The Twin Grandchildren" (1881); "Old and Young" (1882); "Solid Comfort" (1884); "The Grandfather's Story" (1885); and "The Orphaned Grandchild" (1886). He was a pleasing writer, and one of his best sketches, in "Harper's Magazine," humorously describes his attempts to write poetry in the absence of any knowledge of rhythm and sound.

Carroll, John William Henry, archaeologist, born in Albany, N. Y., in 1827; died in New York city, Oct. 13, 1891. He was graduated at Union College in 1847, studied theology, and was ordained a Unitarian clergyman, and soon afterward gave up preaching. He spent several years traveling and collecting rare bronzes, manuscripts, and various curios in Europe and the far East, and after returning home was for some time Professor of Literature in the Vernon Seminary, New York. Subsequently he removed to New York city, wrote for newspapers and magazines, and founded the College of Archaeology and Æsthetics, of which he became dean.

Carter, Samuel Powhatan, naval officer, born in Elizabethtown, Carter County, Tenn., Aug. 6, 1819; died in Washington, D. C., May 26, 1891. He was educated at Washington College, Tennessee, and at Princeton, and entered the United States navy as a midshipman in February, 1840. He was attached to the naval school in Philadelphia in 1846; was promoted passed midshipman in July of that year; served on the coast of Mexico, and took part in the siege and capture of Vera Cruz. He was on duty at the United States Naval Observatory, in Washington, in 1847-48; in 1851-53 he was assistant instructor in infantry tactics at the United States Naval Academy; in 1854 was promoted master, in 1855 commissioned lieutenant; and in 1855-57, while attached to the "San Jacinto," took part in the capture of the Barrier forts, on Canton river, China. From 1858 till 1860 he was assistant instructor in seamanship at the Naval Academy, and on July 11, 1861, he was ordered to report to the Secretary of War for special service with the army. Under instructions from that officer he went to East Tennessee, where he organized the first full regiment for the national army south of Ohio river. He was appointed acting brigadier-general by Gen. George H. Thomas on Sept. 16 following, and was commissioned brigadier-general of United States Volunteers on May 1, 1862. During 1863-64 he was provost-marshal-general of East Tennessee; on March 13, 1865, he was brevetted major-general of United States Volunteers; and in January, 1866, was mustered out of the army. Gen. Carter's career was exceptionally brilliant. He was present at Wild Cat, Ky., at Zollicoffer's repulse, in October, 1861; at the battle of Mill Spring, in January, 1863; commanded during the preliminary operations and participated in the capture of Cumberland Gap, June 17, 1862; commanded the cavalry expedition into East Tennessee which tore up the track of the Tennessee and Vir-

ginia Railroad in December, 1862; defeated the Confederates at Holstein, Jonesville, Dutton's Hill, and Montville, in May and June, 1863; commanded the cavalry division of the 23d Army Corps, and led the advance when East Tennessee was permanently occupied in August, 1863; took part in the siege and battle of Knoxville in December following; commanded a division and the left wing of the army at the battle of Kinston, N. C., March 10, 1865; and drove the Confederates from Goldsboro. After leaving the army he returned to duty in the navy. He was commissioned commander June 25, 1865; was commandant of the United States Naval Academy in 1869-'72; promoted captain 1870; served as a member of the Light-house Board in 1867-'80; promoted commodore Nov. 13, 1878; retired Aug. 6, 1881; and promoted rear-admiral on the retired list May 16, 1882. He had since lived in Washington.

Castro, Manuel, military officer, born in Castroville, Cal., in 1801; died there, May 2, 1891. From early life he was one of the most conspicuous figures in the struggles between the Americans and the Mexicans for the possession of California, and remained till death in bitter enmity against Americans and American institutions. In 1844 he led the revolt against Micheltorena, and for his services was given a large tract of land and made prefect of Monterey, while a brother, Juan Castro, was appointed military commandant there. Later, when John C. Frémont, with his company of frontiersmen, was approaching Monterey, Gen. Castro ordered the explorer to leave the country, and sent his brother with an armed force against him. Juan entrenched himself in the Gabilan mountains, but fled on Frémont's advance. Castro then joined the Flores revolt at Los Angeles, fled into Mexico after Com. Stockton's victory over the Mexicans, held the office of Governor of Lower California for a short time, and then returned to his old home. He compiled his reminiscences for Hubert Howe Bancroft to use in his historical work, and made his last appearance in public in the parade on California "Admission Day," in September, 1890.

Chapman, Frederick Augustus, painter, born in Old Saybrook, Conn., April 18, 1818; died in Brooklyn, N. Y., Jan. 26, 1891. After vainly attempting to become interested in mercantile business in Boston, he removed to New York and studied painting with Prof. S. F. B. Morse. About 1850 he settled in Brooklyn, where he became a founder and the first President of the Brooklyn Art Association, and for a time was engaged in stained-glass decorating. His special works include the stained-glass windows in Holy Trinity Church, Brooklyn, and the oil-paintings of "The Perils of our Forefathers," which was engraved by John C. MacRae; "The Day we Celebrate"; "Raising the Liberty Pole," also engraved; "The Receding Race," "Discovery of the Hudson," both of which were chromo-lithographed by Colton; and "The Battle of Chancellorsville." He contributed many paintings to the exhibitions of the Brooklyn Art Association, and during the past fifteen years had applied himself chiefly to illustrating work.

Chapman, Henry, jurist, born in Newton, Pa., Feb. 4, 1804; died near Doylestown, Pa., April 11, 1891. He was elected a State Senator in 1843, and two years afterward was appointed by Gov. Shunk judge of the Chester-Delaware Judicial District, where he served four years. In 1856 he was elected to Congress, where he served one term, and was on the Committee on the Judiciary. In 1861 he was elected judge of the Bucks County Court, and in 1871 he retired.

Chickering, Charles Frank, manufacturer, born in Boston, Mass., Jan. 20, 1827; died in New York city, March 22, 1891. He was a son of Jonas Chickering, founder of the well-known piano manufacturing house, received a common-school education, and when fifteen years old entered his father's factory and began learning the details of the work. In 1844 he went to India for a period of recreation, taking with him one of his father's instruments, and thus introduced the modern piano into that country. In 1851

he superintended his father's exhibit in the World's Fair, London, and in 1853, on the death of his father, became associated with his brothers, Thomas E. and George H., in conducting the business. He assumed the management of the manufacturing department, made many improvements in the instrument, represented the firm at the Universal Exposition in Paris in 1867, and received the cross and ribbon of the Legion of Honor, became head of the firm on the death of his brother Thomas in 1871, and erected Chickering Hall in 1875. Mr. Chickering organized the first musical festival held in the United States, and was President of the Handel and Haydn Society of Boston. Many years before his death, which occurred in December, 1885, James Henry Paine, the miser, placed in Mr. Chickering's hands for safe keeping, and without a receipt or other acknowledgment, a brown-paper package. During the contest over Paine's estate Mr. Chickering recalled the incident, took the package from his safe, and, tightly rolled in a green bandana handkerchief, found \$400,000 of the miser's accumulations, which he at once turned into the estate.

Chilcott, George Miles, lawyer, born in Huntingdon County, Pa., Jan. 2, 1828; died in St. Louis, Mo., March 6, 1891. He accompanied his parents to Jefferson County, Iowa, in 1844; studied medicine and taught school till 1850; and entered political life by election to the office of sheriff in 1853. Three years afterward he removed to Burt County, Neb., and the same year was elected to the Territorial Legislature as a Republican. In 1859 he settled in Colorado; in 1861 and 1862 was elected to the Legislature; in 1863 was admitted to the bar and appointed register of the United States Land Office for Colorado; in 1865 was elected to Congress under a State organization, which was not recognized by the Federal Government; and in 1866 was elected delegate to Congress, and served one term. He became a member and President of the Territorial Council in 1872; was re-elected to the council in 1874, and elected to the Legislature in 1878; and was appointed United States Senator, to fill the vacancy caused by the appointment of Senator Henry M. Teller to be Secretary of the Interior, April 11, 1882. He served in this office one year.

Clapp, Asa W. H., merchant, born in Portland, Me., in 1805; died there, March 22, 1891. He was graduated at the Military Academy in Norwich, Vt., in 1823; was associated with his father in mercantile business till his father's death in 1848; and was afterward occupied with the care of large real-estate and other investments. He was a member of Congress from 1847 till 1849, and at the time of his death was the oldest ex-member of Congress, excepting Hannibal Hamlin (q. v. in this volume). He was a quiet but generous giver, and was for many years a director of the Maine General Hospital, the Portland Public Library, and of other institutions.

Clapp, William Warland, journalist, born in Boston, Mass., April 11, 1826; died there, Dec. 8, 1891. His father founded the Boston "Advertiser" in 1813 and purchased the "Saturday Evening Gazette" in 1822, and edited both papers for many years. William was brought up in the office of the "Gazette," and was its proprietor from 1847 till 1865. He then became managing editor and principal proprietor of the Boston "Journal," and retained control of it till June 30, 1891, when he retired from both the editorial and the business management. In 1859-'60 he was a member of the Common Council, and subsequently was on the staffs of Govs. Banks and Andrew. He was for many years President of the New England Associated Press. He published "A Record of the Boston Stage" and "The Drama in Boston."

Clark, Alexander, lawyer, born in Washington County, Pa., in February, 1826; died in Monrovia, Liberia, June 3, 1891. He was a free colored man, received a plain village education, learned the barber's trade in Cincinnati, and in 1843 made his permanent home in Muscatine, Iowa. He was elected delegate from Iowa to the first national colored convention held in the United States, which met at Rochester, N. Y., in 1853;

and on the organization of the Republican party promptly united with it, and became one of the most active exponents of its principles. For ten consecutive years he was elected a delegate to either State or county conventions, and he became known as the colored orator of the West. He was a delegate to the national convention of colored men held in Washington, D. C., in 1869; bought the "Chicago Conservator" in 1882, and conducted it for several years, first as a non-partisan and afterward as a Republican newspaper; and in 1883 was graduated at the Iowa State Law School and admitted to the bar, after which he lived in Chicago. In August, 1890, he was appointed United States minister to the republic of Liberia.

Clark, Charles B., manufacturer, born in Theresa, Jefferson County, N. Y., Aug. 24, 1844; died in Watertown, N. Y., Sept. 10, 1891. He received a common-school education, and in 1855 settled in Neenah, Wis., where he engaged in manufacturing. At the beginning of the civil war he enlisted in the 21st Wisconsin Infantry, with which he served to the close of the war. In 1855 he was elected to the State Assembly as a Republican, and in 1886 and 1888 was elected to Congress from the 6th Wisconsin District. While in Congress he was a member of the committees on Merchant Marine and Fisheries and on Rivers and Harbors.

Clark, Daniel, jurist, born in Stratham, N. H., Oct. 24, 1809; died in Manchester, N. H., Jan. 2, 1891. He was graduated at Dartmouth College in 1834, was admitted to the bar in 1837, and began practicing in Epping, N. H. In 1839 he made his permanent residence in Manchester, and soon became conspicuous in public life. He served as a Whig in the Legislature in 1842, 1843, 1846, 1854, and 1855; was elected United States Senator in 1857, and re-elected in 1861; was chairman of the Senate Committee on Claims; President *pro tem.* of the Senate during the first session of the 38th Congress in 1863-'64; and resigned his seat in July, 1866, to accept the office of United States district judge. He held this office till his death. In 1876 he was President of the New Hampshire Constitutional Convention. While in the United States Senate he introduced, and supported till its adoption, the resolution providing for the expulsion from the Senate of the Southern members who had withdrawn on the secession of their States.

Clark, Silas Moorhead, jurist, born in Elderton, Armstrong County, Pa., in 1835; died in Indiana, Pa., Nov. 20, 1891. He was graduated at Jefferson College; studied law and was admitted to the bar; was director of public schools in his town for twelve years; and was a projector and founder of the State normal school there. In 1878 he was a member of the State Constitutional Convention, and from 1882 till his death was a judge of the Supreme Court of Pennsylvania.

Clark, Simon Tucker, physician, born in Canton, Mass., Oct. 10, 1836; died in Lockport, N. Y., Dec. 24, 1891. He was graduated at the Berkshire Medical College and at Genesee College, Lima, N. Y., settled in Lockport to practice in 1861, and became a member of the American Association for the Advancement of Science, the Jewell Scientific Society, the New York State Medical Society, the Medico-legal Society, and of the American Medical Association. For six years he had been Professor of Medical Jurisprudence in Niagara University, Buffalo. Dr. Clark was a well-known insanity expert, and originated the term "mania transitoria" in his testimony in the Pierce-Bullock murder case in Lockport in 1871.

Coe, Israel, manufacturer, born in Goshen, Conn., Dec. 14, 1794; died in Waterbury, Conn., Dec. 18, 1891. In 1829 he entered into partnership with Aaron Benedict, who for many years had been manufacturing bone and ivory buttons. About this time the fashion in men's coats changed to a snuff-colored garment with gilt buttons, and the new firm determined to attempt to make the new style of buttons. The basis of the buttons was sheet brass, which then had to be imported from England. The firm required

thinner sheets than those rolled in England, and being unable to obtain rollings of the desired thinness or to import the sheets in sufficient quantity, Mr. Coe collected all the worn-out brass kettles and sauce-pans in Waterbury and vicinity, cut them up, melted the pieces with alloys, ran the mass into rude molds, and with his own hands rolled the first sheet of brass ever produced in the United States in an old iron-rolling mill in Woodville, Conn. With these sheets the firm began manufacturing the new style of buttons, and also began the rolled-brass industry in this country. They were soon able to erect a rolling mill of their own and to supply sheet brass for the general trade. In 1834 Mr. Coe erected in Torrington, Conn., a mill for making brass kettles, and soon afterward received a gold medal from the Federal Government for making the first brass kettle in this country. In 1850, he organized the first company for mining copper on a large scale in Michigan. He represented Waterbury in the Legislature in 1824, and was honored by the Legislature with a special reception and an engraved memorial in 1885. He had lived in retirement since 1880.

Colburn, Jeremiah, antiquary, born in Boston, Mass., Jan. 12, 1815; died there, Dec. 30, 1891. He received a grammar-school education, entered mercantile life in 1830, and carried on the hat and fur business from 1840 till 1852. In the latter year he was appointed an appraiser in the Boston custom-house, where he remained through two administrations. He was afterward engaged in literary work. When fifteen years old he began collecting coins, and subsequently extended his quest to medals, minerals, shells, autographs, manuscripts, portraits, engravings, colonial and continental money, paper tokens, bank notes, counterfeit money, and bills of broken banks. His collections became very large and valuable, especially in Americana. He was an early member of the New England Historico-Genealogical Society; was a founder of the Prince Society, and supervised the publication of Wood's "New England's Prospect"; was a founder and President of the Boston Numismatic Society, and an editor of the "American Journal of Numismatics"; and was also a founder of the Boston Antiquarian Club, changed in 1882 to the Bostonian Society. He compiled a "Bibliography of the Local History of Massachusetts."

Coles, Abraham, physician, born in Scotch Plains, N. J., Dec. 26, 1813; died near Monterey, Cal., May 3, 1891. When seventeen years old he became tutor of Latin and mathematics in the Plainfield, N. J., Seminary; subsequently he studied law for six months, and in 1835 he was graduated at Jefferson Medical College in Philadelphia; and he began a practice of medicine and surgery in Newark that was continued there till within a few years of his death. In 1848, during a trip to Europe, he spent much time working and studying in the hospitals of Paris during the Revolution. He made a second visit to Europe in 1854. Besides numerous translations, he wrote largely on literary, medical, and scientific subjects; took a keen interest in promoting local and general education; and became proficient in Greek, Hebrew, Sanskrit, and the modern languages. In 1866 he was President of the New Jersey Medical Society, and his formal address was a physiological poem, "The Microcosm." His publications comprise a translation of the "Dies Ire" (1847); "Dies Irae,



in *Thirteen Original Versions* (1859); the first part of "The Evangel, or Life of our Lord in Verse, with Scripture Texts and Notes" (1847), and the second part, under the title "The Light of the World" (1884); "The Microcosm and other Poems," which includes his "Cosmos," lyrics, miscellaneous pieces, and translations of Latin hymns (1881); and "A New Rendering of the Hebrew Psalms into English Verse" (1888).

Conant, Thomas Jefferson, clergyman, born in Brandon, Vt., Dec. 13, 1802; died in Brooklyn, N. Y., April 30, 1891. He was graduated at Middlebury College, where he studied Hebrew and German in addition to the regular course in 1823; then took a post-graduate course in Hebrew and Greek for two years, and was appointed a tutor in Columbia College in 1825. From 1827 till 1833 he was Professor of Latin, Greek, and German in Waterville (Me.) College; in 1835-'51 of Languages and Biblical Literature in Hamilton (N. Y.) Literary and Theological Institution, and in 1851-'57 of the Hebrew Language and Biblical Exegesis in Rochester Theological Seminary. In 1857 he relinquished collegiate work to assume duties that made him most widely known. Under the auspices of the American Bible Union he undertook, in conjunction with the Rev. Asahel C. Kendrick, D. D., and the Rev. Horatio B. Hackett, D. D., a revision of the English version of the New Testament. This labor occupied him many years, his work comprising all the actual revision, excepting Galatians and Philemon, and the final revision of the whole Testament. He was also a member of the American Committee on the English revision of the Old Testament from the beginning. His versions of the Bible were most highly esteemed by the English revisers, who had his translations lying before them while at work, and who made no change in the common version without first consulting his versions. While engaged in these works of revision he found time to lecture and to contribute to religious publications frequently on Biblical criticism and interpretation, and to write on special topics, as the introductions to Clark's "Harmony of the Gospels" and "Commentary on the Gospel of Luke." His numerous publications include translations of the 11th and 17th editions of Gesenius's "Hebrew Grammar" (Boston, 1839; last edition, 1877); "Defense of the Hebrew Grammar of Gesenius against Prof. Stuart's Translation" (New York, 1847); "Job, Revised Version and Notes" (1856); "Matthew, Revised Version" (1860); "Baptizein, its Meaning and Use philologically and historically investigated" (1860); "Genesis, Revised Version and Notes" (1868, 1873); "The New Testament, Common Version revised" (1871); "Psalms, Common Version revised with Notes" (1871); "Proverbs, Revised Version and Notes" (1872); "Greek Text of the Apocalypse, as edited by Erasmus" (1873); "Prophecies of Isaiah, Chapters I-XIII, 22" (1874); and "Historical Books of the Old Testament, Joshua to II Kings" (Philadelphia, 1884).

Congdon, Charles Taber, journalist, born in New Bedford, Mass., April 7, 1821; died in New York city, Jan. 13, 1891. He received a public-school education studied at Brown University, and began his career in journalism in the office of the New Bedford "Register," of which his father was editor. While employed in this office he composed his first verses as he delivered the paper to its subscribers, "Ode to Commerce," "Elegy on the Death of Chatterton," and "The Seasons." From New Bedford he went to Providence and worked nearly a year on "The New Age," then returned to New Bedford and became successively editor of the "Bulletin" and associate editor of the "Mercury." In 1854 he went to Boston and edited "The Atlas," a Whig newspaper, nearly a year, and in 1857 he received a call from Horace Greeley to become an editorial writer on the "Tribune." He retained the latter connection till 1882, in the mean time contributing many articles, sketches, and essays to magazines. Subsequently he resumed magazine work, and in addition corresponded with several newspapers under the pen-name "Paul Potter."

One of his last notable contributions was an article in the "Forum" on "The Experiment of Popular Government" (May, 1886). His publications included: "Tribune Essays" (New York, 1869); Centennial ode, "Carmen Seculare" (1876); poems, "The Last Welcome—Bayard Taylor," and "J. R. G. H.," a tribute to his associate on the "Tribune" (1879); "The Record of Fifty Years: Reminiscences of a Journalist" (1879-'80); "Recollections of a Reader" (1880-'81); and "Autobiographical Papers" (1881-'82).

Conkling, Frederick Augustus, financier, born in Canajoharie, N. Y., Aug. 23, 1816; died in New York city, Sept. 18, 1891. He was a son of Judge Alfred Conkling and a brother of Roscoe Conkling. He received a classical education, engaged in mercantile business in New York city, and in 1858 was elected as a Republican to the Legislature, in which he served two terms and was Chairman of the Committee on Ways and Means. In 1860 he was elected to Congress and placed on the Committee on Naval Affairs. At the outbreak of the civil war he organized the 84th New York Volunteers, of which he was elected colonel, and accompanied it to the field on the first call for three months' volunteers. He served through the Shenandoah campaign, and in 1863 his regiment was on provost-guard duty in Baltimore. In 1868 he was the unsuccessful candidate of the Republican party for Mayor of New York city. In the presidential election of 1872 he supported the Liberal Republican party, and in the succeeding ones he advocated the election of the Democratic candidates. Since the war he had been connected with various financial institutions. He was author of many pamphlets on political, commercial, and scientific subjects.

Connor, Patrick Edward, military officer, born in Ireland, March 17, 1820; died in Salt Lake City, Utah, Dec. 17, 1891. He came to the United States while a boy, was educated in New York city, entered the regular army in 1839 and served till 1844, taking part in the Seminole War in Florida, and after spending two years in mercantile business in New York city removed to Texas in 1846. At the outbreak of the Mexican War he was commissioned captain in the regiment commanded by Albert Sidney Johnston. He took part in the battles of Palo Alto, Resaca de la Palma, and Buena Vista, and in the latter was wounded. From the close of the war till 1861 he was engaged in business in California. He then raised a regiment of volunteers and was assigned to duty in Utah, with orders to prevent a revolt among the Mormons and to rid the overland routes of marauding Indians. On Jan. 24, 1863, with 200 men, he set out on the trail of a band of plundering Indians, and after marching 140 miles in four nights, through deep snow and intensely cold weather, he struck a fortified camp of 300 warriors on Bear river, Washington Territory, and after a desperate fight killed the whole band. He was promoted brigadier-general, March 30, 1863, and brevetted major-general at the close of the war. Soon after the war the Legislatures of Colorado and Nebraska petitioned the War Department to place him in command of the Military District of the Plains, and on the assignment being made he organized a cavalry expedition of 2,000 men against the Sioux and Arapahoe Indians, who had been committing depredations on the overland mail route, and in August, 1865, he severely punished them on Tongue river. On April 30, 1866, he was mustered out of the service. While at Camp Douglas, near Salt Lake City, in October, 1862, he established the "Union Vedette." The first daily newspaper published in the Territory. He also was influential in building up a Gentile community in Utah, located the first silver mine there, drafted the first mining law, introduced navigation on Great Salt lake, built the first silver-lead smelting works, and founded Stockton.

Conrad, Joseph Speed, military officer, born in Ithaca, N. Y., Aug. 23, 1833; died in Fort Randall, S. Dak., Dec. 4, 1891. He was graduated at the United States Military Academy and appointed 2d lieutenant 2d United States Infantry in 1857, and was

promoted 1st lieutenant May 14, and captain Nov. 1, 1861; major of the 17th Infantry, April 27, 1879; lieutenant-colonel of the 22d Infantry, June 27, 1884; and colonel of the 21st Infantry Feb. 24, 1891. In the volunteer service he held the rank of lieutenant-colonel and aide-de-camp from May 5, 1862, till Jan. 21, 1864. He was brevetted major for gallantry in the Wilderness, and lieutenant-colonel for the battle of North Anna river, both dating from Aug. 1, 1864, and colonel for the campaign under Gen. Hancock, March 13, 1865. In May and June, 1864, he was assistant adjutant-general of the 1st brigade, 1st division, 5th Army Corps; from June to August following was acting judge advocate of the 2d Army Corps; and from Feb. 2, 1871, till Oct. 12, 1874, was senior assistant instructor in infantry tactics at the United States Military Academy.

Cooke, John R., military officer, born in Jefferson Barrecks, Mo., in 1833; died in Richmond, Va., April 9, 1891. He was a son of Gen. Philip St. George Cooke, U. S. A., and entered the army as 2d lieutenant in the 8th United States Infantry in 1855. On Jan. 28, 1861, he was promoted 1st lieutenant, and on May 30 resigned his commission to enter the Confederate army, though his father remained loyal to the Union and became a distinguished general. John R. Cooke soon attained the rank of brigadier in the Confederate army, and made himself conspicuous by a dash that approximated recklessness. At Spottsylvania Court-house he was severely wounded, but would allow no one to take command of his brigade.

Cooper, George Henry, naval officer, born in Fort Diamond, N. Y., July 27, 1821; died in Brooklyn, N. Y., Nov. 17, 1891. He was appointed a midshipman in the United States navy Aug. 4, 1837; was promoted past midshipman June 29, 1843; master, Oct. 11, 1850; lieutenant, May 8, 1851; commander, July 16, 1862; captain, Dec. 2, 1867; commodore, June 5, 1874; rear-admiral, Nov. 15, 1881; and was retired July 27, 1884. He was on sea service twenty-five years four months, on shore or other duty eighteen years three months, and was unemployed eleven years three months. He served in co-operation with the army in the Seminole Indian War in Florida; led an assault against Point Isabel, was captured at Monterey, and, after exchange, was present in the attacks on Tobacco, Alvarado, and Tuxpan in the Mexican War; in the civil war commanded several vessels, and for seven weeks was on the monitor "Sangamon" inside Charleston Roads, constantly shelling Fort Sumter and Sullivan's Island; and commanded the North Atlantic Squadron from May, 1882, till his retirement.

Corrado, Nestori, painter, born in Urbino, Italy, in 1810; died in New York city, April 19, 1891. He was educated for the operatic stage, and came to the United States with an Italian opera company in 1831. His fine voice, heard to the best advantage in *basso-profundo* parts, gave him and the company wide popularity. From the United States he traveled to South America, where, after a while, the company was disbanded. He remained in Chili some time, supporting himself by miniature painting. In 1848 he went to California and accumulated a considerable fortune in mining operations. Reaching New York city with the intention of returning to Italy, he became acquainted with the widow of Signor Berti, a noted singing master, and after a brief courtship married her and established himself as a miniature painter. The greater part of his miniature work was done for Tiffany & Co., but he frequently undertook special contracts, such as that under which he did all the miniature painting in the Union Square Theatre after the recent fire. He was one of the founders of the Italian Benevolent Society, the Italian Emigration Society, and La Societ  di Unios Efratellanza, and, although one of the most liberal Italians in the country, died in poverty.

Crawford, George Addison, pioneer, born in Pine Creek, Lycoming (now Clinton) County, Pa., July 27, 1827; died in Grand Junction, Col., Jan. 26, 1891.

He was graduated at Jefferson College in 1847; spent a year in teaching in Salem, Ky.; returned home and began studying law in 1848; and became editor and proprietor of a Democratic newspaper in 1850. In 1851 he was active in the support of William Bigler, Democratic candidate for Governor of Pennsylvania; in 1853-'57 he was a clerk in the office of the postmaster-general in Washington; in 1854-'55 he took the stump in opposition to the Know-nothing movement. In the spring of 1857 he made a trip to Kansas, where he became a founder of Fort Scott, and was president for nearly twenty years of the company that laid out the town. Politically he allied himself with the Free-State party, and during the stormy period of 1857-'60 he opposed the pro-slavery party with such vigor and effectiveness that his life was in daily peril. He was one of the party that exposed the celebrated candle-box election fraud. At the beginning of the civil war he promoted the organization of the 2d Kansas Volunteers for the national army, and later, by organizing the militia of the southern counties, saved that part of the State to the Union. In 1861 he was elected Governor, under a misconception as to the time for holding the first State election under the Constitution, and the Supreme Court declared the election illegal. In 1869 he established the "Daily Monitor" and a free reading-room and museum in Fort Scott; in 1871 he was appointed an alternate United States centennial commissioner, and, besides attending nearly every meeting of the commission during 1871-'76, was a member of several committees. In May, 1876, he removed to Mesa County, Col., where he located and named the town of Grand Junction, superintended its development, and established numerous industries.

Creswell, John Angell James, lawyer, born in Port Deposit, Md., Nov. 18, 1828; died in Elkton, Md., Dec. 23, 1891. He was graduated at Dickinson College, Carlisle, Pa., in 1848, and was admitted to the bar in 1850. After the dissolution of the Whig party he worked and voted with the Democrats till the beginning of the civil war, when he became a Republican. In 1861 he was elected to the Legislature, in 1862 was appointed adjutant-general of the State, in 1863 was elected to Congress, and in 1864 was elected United States Senator to fill the unexpired term of Thomas H. Hicks. On Feb. 22, 1866, by joint request of Congress, he delivered a eulogy on the life of Henry Winter Davis. He was a delegate to the Baltimore Convention in 1864, the Loyalists' Convention in Philadelphia in 1866, the Border States Convention in Baltimore in 1867, and to the National Republican Convention in 1868. He was postmaster-general from March 5, 1869, till July 3, 1874; counsel for the United States before the Court of Commissioners of Alabama Claims; and was one of the commissioners for winding up the affairs of the Freedmen's Saving and Trust Company.

Croasdale, William T., journalist, born in Mill Creek Hundred, Newcastle County, Del., March 27, 1844; died in Merriewold Park, Sullivan County, N. Y., Aug. 9, 1891. He was of Quaker parentage, and was educated at the Friends' Academy, Wilmington, Del. After leaving the academy he engaged in newspaper work in Wilmington. At the time of the second Maryland invasion, he enlisted in the 7th Delaware Volunteers, in which he served till the regiment was discharged. He then became editor of a Republican newspaper in Sussex County, in which he advocated the re-election of President Lincoln. Returning to Wilmington, he was appointed city editor of the "Commercial," and subsequently established "Every Evening," afterward consolidated with the "Commercial." In 1882 he established the "Day," in Baltimore; in 1886 became chief editorial writer on the New York "Star"; in 1887 on the establishment of the "Standard" by Henry George, he became its managing editor. In 1890 he was an unsuccessful candidate of the county Democracy for Congress. His writings were mainly on political and economic subjects.

Crosby, Howard, clergyman, born in New York city, Feb. 27, 1826; died there, March 29, 1891. He was a grandson of Dr. Ebenezer Crosby, who served as a surgeon in the Revolutionary War, and a son of William B. Crosby, the philanthropist. Howard was graduated at the University of New York in 1844, and seven years later was made Professor of Greek in that institution. In 1859 he was called to the Greek



chair in Rutgers College, New Brunswick, N. J., and in 1861 he entered the ministry, but still retained his professorship. This, however, he gave up in 1863, on becoming pastor of the Fourth Avenue Presbyterian Church in New York. He held the pastorate till the end of his life, and, in addition, from 1870 till 1881 he was Chancellor of the University of New York. He was many times a delegate to the General Assembly of the Pres-

byterian Church, and in 1873 was its moderator. In 1877 he was a delegate to the first Presbyterian General Council, in Edinburgh, Scotland. In the same year he was one of the founders of the Society for the Prevention of Crime, and was chosen its president, which office he held as long as he lived. He received the degree of D. D. from Harvard College in 1859, and that of LL. D. from Columbia in 1871. Dr. Crosby was for several years more active, perhaps, than any other citizen of New York in efforts for the prevention of intemperance and the suppression of crime. He was an advocate of temperance, but not of total abstinence. His work was not done alone through the societies with which he was connected; many entertaining stories are told of his personal adventures and unfinching courage in behalf of the poor and the wronged. In one instance, seeing a malicious hack-driver purposely run into and break a swill cart to which a large dog was attached, while the child owner was in a neighboring area, Dr. Crosby made a note of the hack's number, and then told the child to take it to the nearest wagon shop and have it repaired and send the bill to him. When this was done, he presented the bill to the livery company that owned the hack, and demanded payment. Being met with a refusal, the doctor said, "If you don't send the money to my house before six o'clock I shall put the case into the hands of a lawyer," and the money was sent in an hour. This is a fair sample of the sort of thing that he was doing at every opportunity. He was one of the revisers of the New Testament, was one of the best Greek scholars in the United States, was an agreeable speaker, a forcible writer, and in every respect a model American citizen. He published "Lands of the Moslem" (New York, 1851); "Scholia on the New Testament" (1861); "Social Hints" (1866); "Life of Jesus" (1870); "Bible Companion" (1870); "A Healthy Christian" (1871); "Thoughts on the Pentateuch" (1873); "Notes on Joshua" (1875); "Commentary on Nehemiah" (1876); "The Christian Preacher" (1879); "The Humanity of Christ" (1880); and a "Commentary on the New Testament" (1885).

Curtis, Benjamin Robbins, jurist, born in Boston, Mass., in 1855; died there, Jan. 25, 1891. He was a son of Judge Benjamin R. Curtis, was graduated at Harvard in 1875, studied in the Cambridge Law School, and was admitted to the bar in 1879. In 1881 he was appointed a lecturer in Harvard University; in 1886 was appointed judge of the Municipal Court of Boston, which office he held until death. Judge Curtis edited "The Life and Writings of Benjamin R. Curtis" (1879); "The Jurisdiction, Prac-

tice, and Peculiar Jurisprudence of the Courts of the United States" (1880); and the second volume of Myer's "Federal Decisions in Courts" (1885).

Curtis, William Baker, military officer, born in Sharpsburg, Md., April 18, 1821; died in West Liberty, Ohio County, W. Va., Aug. 25, 1891. The family removed to West Liberty in 1832, where, after learning the cabinetmaker's trade, he established himself in business in 1837. From 1848 till 1862 he kept a country store and was also a justice of the peace. In 1861 he was a member of the Wheeling convention to organize a State Government for West Virginia. Early in 1862 he raised a company, which was incorporated in the 12th West Virginia Infantry, and was chosen captain. In June, 1863, he was promoted major; in January, 1864, colonel; and in October following was placed in command of a brigade. This was reorganized in December, and in the same month he was transferred to the Army of the James, and placed at the head of the 2d Brigade, independent division, 24th Army Corps. As commander of this brigade he took part in the siege of Richmond, and on April 2, 1865, he captured Fort Gregg, near Petersburg. For his gallantry on that occasion he was promoted brigadier-general, and his old regiment was presented by Gen. John Gibbon, the corps commander, with a costly bronze eagle. After the war he served a term in the State Legislature, and was superintendent of the Penitentiary in 1870 and 1871.

Darling, Henry, educator, born in Reading, Pa., Dec. 27, 1823; died in Clinton, N. Y., April 20, 1891. He was graduated at Amherst College in 1842; studied theology at the Union Theological Seminary in 1842-'43, and at the Auburn Theological Seminary in 1843-'45; was ordained Dec. 30, 1847; and installed pastor of the Presbyterian Church in Hudson. In 1852 he went to the Clinton Street Church, Philadelphia, where he officiated till 1861, resigning on account of failing health. In 1863 he accepted a call to the Fourth Presbyterian Church in Albany, N. Y., and held this pastorate till 1881, when he was elected Moderator of the General Assembly and President of Hamilton College, Clinton, N. Y. He held the office of president of the college till his death. President Darling's publications comprised sermons, addresses on special occasions, contributions to religious periodicals, and "The Closer Walk" (1862); "Slavery and the War" (1863); "Conformity to the World" (1873); and "Not Doing, but Receiving" (1875).

Davenport, Fanny Elizabeth, actress, born in London, England, July 6, 1829; died in Canton, Pa., July 20, 1891. She was a daughter of Frederick Vining, the manager of the Haymarket Theatre, London. She made her first appearance on the stage when three years old, and her first appearance as an actress in 1847, in the part of Juliet in "Romeo and Juliet." For two years she played in the Haymarket and Drury Lane Theatres, supporting her father, G. V. Brookes, Charles Kean, William C. Macready, and other popular actors. On Jan. 8, 1849, she married Edward L. Davenport, the American actor, then playing a successful engagement throughout England, and temporarily retired from the stage. She accompanied him to the United States, and when he made his first appearance, after an absence of seven years, in the old Broadway Theatre, New York, on Sept. 11, 1854, as Othello, she supported him as Desdemona. On March 22, 1855, she appeared at a benefit tendered him as Margaret Elmore in "Love's Sacrifice," and from that time till his death, on Sept. 1, 1877, she supported her husband in all his important engagements. She was the mother of Fanny, Florence, Edgar, and Henry Davenport, and of Mrs. William Seymour.

Day, Hannibal, military officer, born in Montpelier, Vt., in 1804; died in Morrilstown, N. J., March 26, 1891. He was a son of Sylvester Day, M. D., assistant surgeon, United States army, and was graduated at the United States Military Academy and appointed second lieutenant in the Second United States Infantry in 1823. On April 4, 1832, he was promoted first lieutenant; July 7, 1838, captain; Feb. 23, 1852,

major; Feb. 25, 1861, lieutenant-colonel; and June 7, 1862, colonel of the Sixth United States Infantry. He was retired on Aug. 1, 1863, and was brevetted brigadier-general for long and faithful service on March 13, 1865. During his career in the army he was on garrison, engineering, recruiting, and frontier duty till the opening of the Indian war in Florida; served in the Seminole and Mexican wars; was on frontier duty in California from the close of the Mexican War till 1852; and was then on garrison and frontier service in the Northwest Territories till 1861. During the Gettysburg campaign in 1863 he distinguished himself in the defense of Little Round-top. He there commanded the first brigade of Ayres's division of the 5th Corps, and held the same command during the march to Warrenton, Va., the same month. After his retirement he was in command of Fort Hamilton, New York harbor, till June 8, 1864, and performed duty on military commissions and courts-martial till 1869, when he retired.

De Leon, Edwin, author, born in Columbia, S. C., in 1828; died in New York city, Dec. 1, 1891. He was graduated at the University of the South; practiced law in Columbia for several years; became editor of the "Telegraph," and with Edwin Fisher established the "Southern Press" in 1850; and soon afterward founded and became editor of the "National Democrat" in Washington, D. C. In 1854 he was appointed United States consul-general and diplomatic agent at Cairo, Egypt, and he held the office for eight years, resigning to enter the service of the Confederacy. Jefferson Davis appointed him special diplomatic agent in Europe, and during the war he made many ocean trips and ran the blockade seven times. He contributed his entire personal fortune to the cause of the Confederacy. After the war he remained abroad several years, supporting his family then and after returning to the United States by writing for various publications. In 1881 he revisited Egypt, and established a telephone system in its chief cities. His publications include "Thirty Years of my Life on Three Continents," "The Khédive's Egypt," a novel, "Askaras Kassis, the Captain," and "Under the Star and under the Crescent."

Dennett, Daniel, agriculturist, born in Saco, Me., in 1813; died in Brook Haven, Miss., Jan. 5, 1891. He received a common-school education; went West in 1833, and taught school eight years in various parts of Ohio and in Dubuque, Iowa; removed to St. Mary's Parish, La., in 1841, and taught there for six years; and in 1847 became proprietor and editor of the "Planters' Banner," in Franklin. He published this paper till the beginning of the civil war, and resumed editorial work immediately after its close. For a time he was editor-in-chief of the New Orleans "Picayune," and since about 1876 he had been agricultural editor of that paper. He had a large farm at Brook Haven, Miss., and was one of the few agriculturists who successfully conducted a Southern farm by Northern methods.

De Rossy, Gustavus Adolphus, military officer, born in Brooklyn, N. Y., Nov. 3, 1818; died in Detroit, Mich., May 29, 1891. He was a student in the United States Military Academy in 1835-'38; was appointed a 2d lieutenant in the 4th United States Artillery on March 8, 1847, and, going directly into the Mexican War, was brevetted 1st lieutenant, Aug. 20, for Contreras and Churubusco, and captain, Sept. 13, for Chapultepec. From Jan. 12, 1849, till Aug. 9, 1857, he was quartermaster of the 4th United States Artillery. In the regular army he was promoted 1st lieutenant May 16, 1849; captain, Aug. 17, 1857; major of the 8d United States Artillery July 26, 1866; lieutenant-colonel, Aug. 25, 1879; and colonel of the 4th Artillery, June 30, 1882. He was transferred to the 3d Artillery July 17, 1882, and retired from the service on Nov. 3 following. In the volunteer army he was commissioned colonel of the 4th New York Artillery March 17, 1863, promoted brigadier-general May 29 following, and was mustered out of the service Jan. 15, 1866. In the civil war he was brevetted major June

25, 1862, for Fair Oaks; lieutenant-colonel, July 1, 1862, for Malvern Hill; and colonel and brigadier-general, March 13, 1865, for services during the war. From March 1, 1871, till May 1, 1874, he was superintendent of practical instruction and tactical recitations in the United States Artillery School. After his retirement he lived in Detroit.

Devens, Charles, jurist, born in Charlestown, Mass., April 4, 1829; died in Boston, Mass., Jan. 7, 1891. He was graduated at Harvard in 1848, took a full course in the Cambridge Law School, and was admitted to the bar in 1841. He practiced eight years in Franklin County, Mass., residing first at Northfield and afterward at Greenfield, and during that time he served two years in the State Senate. In 1849 he was appointed United States marshal for Massachusetts. Soon afterward Thomas Sims, a fugitive slave who had been captured in Massachusetts, was brought before him to be remanded to his master. The marshal felt obliged by his oath of office to execute the formal process, but his own antislavery convictions were so strong that he made several attempts to purchase the freedom of the fugitive. Subsequently, when Sims's master offered to give him his freedom for \$1,800, Lydia Maria Childs undertook to raise the sum. In response to a letter from her, Mr. Devens asked her to return all subscriptions and to permit him to pay the entire amount. Before negotiations with Sims's master were concluded the civil war broke out. Mr. Devens held the office of marshal till 1853, and in the following year resumed practice in Worcester. On April 10, 1861, he was commissioned major commanding the 3d Battalion of State Volunteer Rifles, and in July following was appointed colonel of the 15th Regiment of Massachusetts Volunteers. In his first battle, Ball's Bluff, he received a wound. He was promoted brigadier-general in 1862; commanded a brigade in the Peninsular campaign; received a second wound at Fair Oaks; was present at Antietam and Fredericksburg; and in 1863, while commanding a division in the 11th Corps, received a third wound at Chancellorsville. The last wound caused his retirement from the field till the spring of 1864, when he was appointed to the command of a division in the old 18th Corps, reorganized as the 3d division of the 24th Corps. On the evacuation of Richmond by the Confederates, his troops were the first to occupy the city. For his gallantry in this campaign he was promoted major-general of volunteers, and appointed commander of the military district of Charleston. He was mustered out of the service, at his own request, in June, 1866, and returned to his law practice in Worcester. In April, 1867, he was appointed a justice of the Superior Court of Massachusetts, and he served till 1873, when he was promoted to the bench of the State Supreme Court. In 1877 he was appointed Attorney-General of the United States, and soon after the close of his term in 1881 he was reappointed a justice of the Supreme Court of the State, which office he held until his death. Judge Devens delivered the oration at the centennial celebration of the battle of Bunker Hill on June 17, 1875, at the dedication of the soldiers' monuments at Boston and Worcester, and on the death of Gens. Meade and Grant.

Dillingham, Paul, lawyer, born in Shutesbury, Franklin County, Mass., Aug. 10, 1799; died in Waterbury, Vt., July 28, 1891. When six years old he removed with the family to Waterbury, where he studied law, was admitted to the bar in 1823, and formed a partnership with Judge Dan Carpenter. He was elected town clerk in 1823, and held the office fifteen years; in 1833 he was elected to the Legislature, where he served six consecutive terms, during two years of which he was also State's attorney; in 1836-'37 he was a member of the State Constitutional Convention; and in 1841 he was elected a State Senator. At the end of his term in the Senate he was elected to Congress, where he served two terms, was a member of the Committee on the Judiciary, and was the only Democrat in the Vermont delegation. In 1861 he

was re-elected to the State Senate, in 1862 was elected Lieutenant-Governor, and in 1865 was elected Governor as a Republican. One of his sons, William P. Dillingham, also became Governor of Vermont, and a daughter married the late United States Senator Matt. H. Carpenter, of Wisconsin.

Dodd, Edward, congressman, born in Salem, Washington County, N. Y., in 1805; died in Argyle, N. Y., March 1, 1891. He received a public-school education, and was brought up in mercantile life. He was elected clerk of Washington County in 1834 for three years, and was twice re-elected for a similar term. He was a member of the State Constitutional Convention in 1846; was elected to Congress in 1855 and 1857; was United States marshal for the Northern District of New York from April, 1863, till March, 1865, and again from July, 1868, till April, 1869; and was a Republican presidential elector in 1884.

Dodworth, Harvey B., musician, born in Sheffield, England, Nov. 16, 1822; died in West Hoboken, N. J., Jan. 24, 1891. He was a son of Thomas Dodworth, a well-known musician and bandmaster; received a musical education from his father; came to New York with his father and brothers Allan and Charles in 1826, and made his first appearance as an instrumentalist—playing the flute—in New York in the following year. He learned also the trombone, trumpet, and violin; and, besides playing in the brass band organized by his father soon after settling in New York, he was almost constantly engaged in the orchestras of theatres till 1839, when he became leader of his father's band. He continued at the head of this organization—the first formed in New York of white men exclusively—till October, 1890, more than fifty-one years. During this period his orchestra played in Niblo's Garden for fifteen years; he furnished music at Daly's, Wallack's, and the old Park theatres; organized a cornet band for the 7th Regiment; held engagements to furnish regimental music for the 12th, 13th, and 22d Regiments; was for many years bandmaster of the 71st Regiment, with which he served in the first and second battles of Bull Run; supplied the national armies with fifty bandmasters and 500 musicians; introduced free park concerts in New York; and was for twenty-four years leader of the band at Central Park. He also furnished the music at presidential inaugurations for nearly thirty years; was the first musician in the United States to arrange Wagner's music for military bands; was the first to introduce reed instruments in military bands; and invented improvements in brass instruments.

Draper, Lyman Copeland, historian, born in Hamburg (now Evans), Erie County, N. Y., Sept. 4, 1815; died in Madison, Wis., Aug. 26, 1891. He was brought up on a farm and received a village-school education in Lockport, N. Y.; was a clerk for three years; went to Mobile, Ala., in 1833, and began collecting material relating to Western history, biography, and geography; studied in Granville College, Ohio, in 1835-'36; and began a systematic collection of historical material from living pioneers in 1838. In 1840 he was appointed editor of a newspaper in Pontotoc, Miss.; in 1842 he received a clerkship in the Buffalo office of the Erie Canal; and in 1843-'53 he pursued historical studies in Philadelphia. In the latter year he was offered the office of corresponding Secretary of the Wisconsin Historical Society at Madison, and, excepting in 1858-'59, when he was State Superintendent of Public Instruction, he held the office till Jan. 6, 1887, when he was chosen honorary secretary for life. His publications include ten volumes of the "Collections" of the society, personally gathered (1853-'57); "Madison, the Capital of Wisconsin" (1857); "The Helping Hand," in conjunction with William A. Croft (1869); "King's Mountain and its Heroes" (1881); and "Essay on the Autographic Collections of the Signers of the Declaration of Independence and of the Constitution" (1889). He also had nearly completed "The Mecklenburg Declaration of Independence" and "Border Forays and Adventures." Dr. Draper bequeathed all his property to the His-

torical Society, except a life interest in the homestead and \$1,000 per annum to his widow; and the exceedingly valuable books and manuscripts that he collected during his life will remain in the society's library, while the residue of his personal estate will doubtless be used, as he desired, for the erection of a fire-proof building for his treasures.

Drayton, Thomas Fenwick, military officer, born in South Carolina about 1807; died in Florence, S. C., Feb. 18, 1891. He was graduated at the United States Military Academy in 1828; was on garrison duty in Jefferson, Mo., and Newport, Ky., for four years, and on topographical duty for four years; and resigned from the army Aug. 15, 1836. After being employed as a civil engineer in Charleston, Louisville, and Cincinnati, he became a planter in St. Luke's Parish, S. C., in 1838. He was a State Senator in 1853-'56, and President of the Charleston and Savannah Railroad in 1853-'61. He entered the Confederate army at the beginning of the civil war, was commissioned brigadier-general, and was given command of the troops on Hilton Head Island to oppose the Federal naval expedition to Port Royal, in which his brother, Captain Percival Drayton, commanded a national vessel, in November, 1861. His mansion stood a few yards from the beach and not more than a mile from the Confederate Fort Walker. He had a force of 625 men with him in the fort, which he was compelled to evacuate, after a bombardment of four hours, on Nov. 7. After the war he engaged in agriculture in Georgia, subsequently removed to South Carolina, and in 1878 was appointed President of the State Immigrant Association.

Duell, Robert Holland, lawyer, born in Warren, Herkimer County, N. Y., Dec. 20, 1824; died in Cortland, N. Y., Feb. 11, 1891. He received an academic education, studied law, and was admitted to the bar in 1845; settled in Cortland to practice in 1848, and was district-attorney of the county in 1850-'55. In 1855-'59 he was county judge; in 1858, 1860, 1870, and 1872 he was elected to Congress as a Republican from the 24th New York District; in 1869-'71 he was assessor of internal revenue; and on the expiration of his last term in Congress he held the office of United States Commissioner of Patents for one year. While in Congress he was a member of the committees on Revision of the Laws of the United States, on Expenditures on Public Buildings, and on Foreign Affairs.

Eddy, Zachary, clergyman, born in Stockbridge, Vt., Dec. 19, 1815; died in Detroit, Mich., Nov. 15, 1891. He was educated by private tutors; was ordained in the Cumberland Presbyterian Church in 1835; acted as missionary in Pennsylvania and Ohio in 1835-'38; and held pastorates in Springville, N. Y., 1838-'43; Mineral Point, Wis., 1844-'50; Warsaw, N. Y., 1850-'56; Birmingham, Conn., 1856-'58; Northampton, Mass., 1858-'67; Brooklyn Heights (Reformed Dutch Church), N. Y., 1867-'71; Detroit (Congregational Church), Mich., 1873-'84; and Atlanta, Ga., 1884-'86. He received the degree of D. D. from Williams College in 1858. Dr. Eddy was author of "Immanuel, or the Life of Christ" (Springfield, 1868); and editor of "Hymns of the Church, compiled for the General Synod of the Reformed Church in America" (New York, 1869); of "Hymns and Songs of Praise," in conjunction with the Rev. Drs. Hitchcock and Schaff (1874); and of "Carmina Sanctorum," with the Rev. Dr. Hitchcock and Lewis Ward Mudge (1886).

Edwards, Henry, actor and entomologist, born in Ross, Herefordshire, England, Aug. 27, 1830; died in New York city, June 9, 1891. While a clerk in London he studied for the stage, and made frequent appearances in private theatres. In 1853 he went to Australia, where he remained for more than twelve years, managing theatres in Sydney and Melbourne, supporting Gustavus V. Brooke, Charles Poole, and George Fawcett Rowe, and taking up the study of entomology, which he pursued to the close of his life. From Australia he went to Peru, Panama, and San Francisco, where he spent twelve years as actor and manager. His first Eastern appearance was made in

Boston, in 1874, when he played Master Walter to Mary Anderson's Julia in "The Hunchback," Marc Antony in "Julius Caesar," Mercutio, Macduff, and Schlem in "The Exiles." He came to Wallack's Theatre, New York, in 1879, making his first appearance Dec. 8, as Josiah Clench, in Byron's comedy of "Our Girls." Subsequently he adopted old men's parts, playing second to John Gilbert in old comedies and the principal parts in new ones. Among his popular parts were Sir Oliver Surface in "The School for Scandal," Colonel Rocket in "Old Heads and Young Hearts," Sir Jealous Traffic in "The Busybody," Baron Stein in "Diplomacy," Adam in "As You Like It," the servant in "Harvest," Squire Weston in "Sophia," and Dominic Vanderver in "The Dominie's Daughter." He was considered one of the foremost entomologists in the country, and his collection of *Lepidoptera* has been pronounced unsurpassed.

Ekin, James Adams, military officer, born in Pittsburgh, Pa., Aug. 31, 1819; died in Louisville, Ky., March 27, 1891. He was a grandson of Col. Stephen Bayard, of the army of the Revolution, and for several years prior to the civil war he was engaged in steamboat building at Pittsburgh. He was appointed 1st lieutenant in the 12th Pennsylvania Infantry on April 25, 1861, and captain and assistant quartermaster on Aug. 7 following; was lieutenant-colonel and quartermaster from Feb. 15 till Aug. 1, 1864, and colonel from Aug. 2, 1864, till Jan. 1, 1867; and was brevetted brigadier-general of volunteers, March 8, 1865, for meritorious services in the quartermaster's department during the war. In the regular army he was appointed captain March 18, 1863; lieutenant-colonel and deputy quartermaster-general July 29, 1866, and colonel and assistant quartermaster-general Feb. 13, 1862; and was retired Aug. 31, 1868. On March 13, 1865, he was brevetted major, lieutenant-colonel, colonel, and brigadier-general in the regular army. His services were especially commended by President Lincoln, Secretary Stanton, Gov. Morton, and Gens. Meigs, Halleck, J. J. Reynolds, and McDowell. He was a member of the commission that tried the murderers of President Lincoln.

Elfvig, Nere A., military officer, born in Sweden, Feb. 8, 1832; died in Stockholm, Sweden, March 4, 1891. He was graduated at the Swedish Military Academy, and was employed by the Government in the construction and improvement of harbors till 1855, when he came to the United States. At the beginning of the civil war he enlisted in the 48th New York Volunteers, was soon commissioned 1st lieutenant, and was promoted captain Aug. 29, 1862. He was present during the assault on the defenses of Charleston in 1863, and was wounded at Fort Wagner. In the early part of 1864 he was on duty in Florida as brigade inspector, receiving his second wound at Olustee. Subsequently he took part in the battles at Drury's Bluff, Cold Harbor, and the first assault on Fort Fisher, and in the second assault of the latter he commanded the regiment after the colonel had been wounded; and after the fall of the fort he was placed in command of his brigade. On Feb. 20, 1865, he received his third wound, which caused the loss of a leg. For his services in the war he received the brevet of colonel of volunteers and of lieutenant-colonel in the regular army and was pensioned. He then returned to Sweden and became a professor in the military academy. In 1869 he was appointed United States vice-consul at Stockholm, and in 1871 promoted to be consul, and he held the latter office till his death.

Elliott, George William, journalist, born in New York city in 1848; died in Rochester, N. Y., March 18, 1891. He removed to Auburn in early youth, studied at Cazenovia Seminary, and Wesleyan University, and was graduated at Syracuse University in 1873. In the latter year he became editor of "The Northern Christian Advocate," and from 1874 till 1881 he was associate editor of "The Rochester Democrat and Chronicle." He then managed "The American Rural Home" till 1885, when he became editorial and

advertising manager of a medical establishment. He was a Republican in politics and an advocate of municipal reform, had been an alderman and an unsuccessful candidate for mayor, and was one of the founders of the park system of Rochester.

Emmett, Joseph Kline, actor, born in St. Louis, Mo., March 13, 1841; died in Cornwall, N. Y., June 15, 1891. In early life he was a sign-painter. He cultivated a natural taste for music, and began his career on the stage as a singer and dancer in a local variety theatre. His first regular engagement was with Morris and Wilson's minstrels, with whom he appeared in St. Louis, Cincinnati, Buffalo, and San Francisco. In 1868 he joined Bryant's Minstrel Troupe, and first appeared in New York city. In the following year Charles Gaylor wrote for him "Fritz, our Cousin German," which was first produced in Buffalo, Nov. 23, 1869, and had a remarkable midsummer run in Wallack's Theatre, New York, in 1870. The humor, drollery, good temper, and childish amiability of the actor in this piece won all hearts, and made the play a phenomenal success and the player a rich man. Mr. Emmett also appeared in two other plays written for him by Mr. Gaylor; in one, "Fritz in Ireland," by William Carleton; and in "Uncle Joe, or Fritz in a Madhouse," his last play; but in none was he so successful and popular as in the original "Fritz." His great failing was love of strong drink, and this caused him to break many engagements and to be confined several times in inebriate asylums.

Errett, Russell, journalist, born in New York city, Nov. 10, 1817; died in Pittsburgh, Pa., April 7, 1891. From the death of his father, in 1824, he had to depend on his own resources, and he acquired but a limited education. He removed to Pittsburgh in 1829, became a baker's apprentice in 1833, and worked as a journeyman in Alabama and Kentucky; returned to Pittsburgh and began teaching, and in 1842 was appointed clerk to the mayor and editor of the "Sun" newspaper. In 1845 he took charge of the "Patriot," an antislavery paper in Washington, Pa., and in 1852 entered the editorial room of the Pittsburgh "Gazette," of which he became editor and part proprietor, retiring from it in 1865. From its organization, in 1856, he was an active member of the Republican party. He attended its first national convention in Pittsburgh, and was an efficient official under it for thirty years. In 1860 he was elected Comptroller of Pittsburgh; in 1860-'61, 1872-'76, and 1889-'90 he was chief clerk of the State Senate; in 1861-'65 he was a paymaster in the army; in 1867 was elected State Senator; in 1869-'73 was assessor of internal revenue; in 1876, 1878, and 1880 was elected to Congress; and in 1883-'87 was United States pension agent of Pittsburgh.

Faunce, John, naval officer, born in Plymouth, Mass., March 25, 1807; died in Jersey City, N. J., June 5, 1891. He went to sea when thirteen years old, and was taught navigation by a sailor, to whom he gave his allowance of grog as compensation. Before he reached his majority he became commander of a ship by reason of the death of the captain at sea. In 1837 he entered the United States Revenue Marine Service as 3d lieutenant, and was ordered to duty on the "Campbell" at Baltimore, then under commission to co-operate with the army and navy in the campaign against the Seminole Indians in Florida. For nearly two years he was the only officer on board the vessel, and while protecting the coast he took part in many engagements with the Indians. He was promoted 2d lieutenant June 5, 1841; 1st lieutenant Oct. 28, 1845; and captain March 8, 1855. Early in 1855 he was placed in charge of the life-saving stations on the coasts of New Jersey and Long Island, and in 1857 was appointed assistant to the naval constructor assigned to the building of the celebrated revenue steamer "Harriet Lane." On the completion of the vessel he became her commander, and remained such till September, 1861, when the vessel was incorporated with the regular navy. With his vessel he accompanied the naval

expedition to Paraguay in 1858-'59, and he subsequently received the commendations of Flag-officer Shubrick and the Secretary of the Navy for "the skill and zeal with which he used the very efficient vessel under his command in extricating naval vessels from perilous situations," besides a silver pitcher from the officers of the fleet. The "Harriet Lane" was one of the vessels forming the small fleet that was hastened to the relief of Fort Sumter in April, 1861, and was present at the capture of the fortifications at Hatteras Inlet in the following August, being under the command of Capt. Faunce on both occasions. After the war he was one of the first officers appointed to locate stations of the life-saving service on our coasts, and thus had much to do with the organization of the first experimental service authorized by Congress and of the present model system. He remained in active service till May, 6, 1881.

Fay, Julius Augustus, lawyer, born in Baltimore, Md., in 1840; died in Elizabeth, N. J., Sept. 26, 1891. He was graduated at Williams College, entered the national army as a lieutenant in 1862, served in the 80th, 35th, and 40th New Jersey regiments, and was promoted colonel in 1865, and brevetted lieutenant-colonel in the regular army for gallantry before Petersburg. After the war he held the office of Inspector-General of Militia of New Jersey under Govs. Randolph and Parker. He studied law, was admitted to the bar in 1866, and soon became eminent as a criminal lawyer, and during the ten years he was prosecutor of Union County he was credited with 3,000 convictions out of 3,040 cases tried by him.

Feat herstone, Winfield Scott, lawyer, born in Tennessee, in 1818; died in Holly Springs, Miss., May 28, 1891. In early life he removed to Mississippi, where he studied law and was admitted to the bar. He was elected to Congress in 1846 and 1848, and declined a third term that he might confine himself to his law practice. At the beginning of the civil war he entered the Confederate army, served through the war in Virginia and in the Transmississippi Department, and attained the rank of brigadier-general. He was a member of the State Legislature in 1875, and chairman of the committee that prepared the articles and conducted the impeachment of Gov. Adelbert Ames and other State officers, and as chairman of the Judiciary Committee in 1879-'80 he aided largely in revising the State code.

Ferrel, William, meteorologist, born in Bedford (now Fulton) County, Pa., Jan. 29, 1817; died in Maywood,



Kansas, Sept. 18, 1891. His early education was acquired at winter schools in log cabins, and at four-

teen his schooling ended. In 1832, while working on his father's farm, he observed a sun eclipse, which so excited his interest that he procured mathematical text-books and studied them until he was able to predict eclipses. So accurate were his results that when the almanac was issued his calculations showed no greater error in time than nine minutes. Other text-books were procured and studied by the light of a dim candle or the blaze of light-wood until he attained the age of twenty-two, when, by the aid of money earned in teaching and promises of assistance from his father, he entered Marshall (now Marshall and Franklin) College. After two years he taught in Virginia until he had earned sufficient money to pay his expenses at Bethany College, where he was graduated in 1844. Resuming his vocation as a teacher, he settled in Liberty, Mo., and devoted much of his leisure to study, especially in the line of higher mathematics. Then he taught in Southern Kentucky for seven years, after which for four years he was professor in a commercial college in Nashville, Tenn. At this time he published "Winds and Currents of the Ocean" in the Nashville "Journal of Medicine and Surgery," and wrote for Dr. Benjamin A. Gould's "Astronomical Journal." These led to his acquaintance with scientific men, through whose influence he was appointed in 1857 assistant in the office of the "American Ephemeris and Nautical Almanac," then issued in Cambridge by Prof. Joseph Winlock. Ten years later he accepted an appointment under Benjamin Pierce in the service of the Coast Survey, with special charge of the consideration and discussion of tidal relations. This place he held until 1882, and subsequent to 1874 the annual reports of the Coast Survey contain his special contributions of "Tidal Researches." He invented a maxima and minima tidal-predicting machine, which was constructed at a cost of \$2,500, and which is described in Appendix No. 10 of the "Report of the Coast and Geodetic Survey" for 1883. By its use the labor of more than thirty men was saved. In 1882 he became Professor of Meteorology in the Signal Office in Washington, D. C., where he remained for four years, and then retired to devote himself exclusively to private researches. In Europe as well as in this country Prof. Ferrel was regarded as the leader in the methods of mathematical meteorology. The honorary degrees of A. M., and Ph. D. were conferred upon him, and in 1868 he was elected to the National Academy of Sciences. He was an associate fellow of the American Academy of Arts and Sciences, and an honorary member of the Austrian, London, and German Meteorological Societies. His professional papers numbered more than fifty, many of which are in the series of "Professional Papers of the United States Signal Service," and include "Motions of Fluids and Solids relative to the Earth's Surface" (1859); "Determination of the Moon's Mass from Tidal Observations" (1871); "Converging Series expressing the Ratio between the Diameter and the Circumference of a Circle" (1871); "Meteorological Researches," Part I, "On the Mechanics and the General Motions of the Atmosphere" (1877); Part II, "On Cyclones, Tornadoes, and Waterspouts" (1880); Part III, "On Barometric Hypsometry and the Reduction of the Barometer to Sea Level" (1882); and "Temperature of the Atmosphere and the Earth's Surface" (1884). His books were: "On the Recent Advances in Meteorology" (Washington, 1886), a text-book designed for use in the Signal-service School of Instruction, and also for a hand-book in the office of the chief signal officers, and "A Popular Treatise on the Winds" (New York, 1889).

Festetics, Count Charles Albert, civil engineer, born in Hungary, about 1840; died in Jersey City, N. J., June 25, 1891. He was a nobleman of ancient lineage, although the fact was not known to the public till after his death. His father was chamberlain of the court of Austria, and the son was graduated at the Austrian military academy, and attained the rank of colonel in the Austrian army. Charles set out for

the United States during the latter part of the civil war to enter the national army, but the struggle ended before his arrival. He then established himself in business as a mining and civil engineer, and was first engaged in constructing a part of the Texas and Pacific Railroad. In 1868-'69 he was first assistant to Gen. Charles P. Stone, then making surveys for the Florida Ship Canal, and personally surveyed the route; in 1872 he was engineer-in-chief in charge of the laying of the double track for the New York Central and Hudson River Railroad from Albany to Buffalo; and subsequently he was consulting expert and first assistant to Gen. Stone in building the pedestal for the Bartholdi statue, assistant to Gen. McClellan when the latter was chief engineer of the New York Dock Department, and at the time of his death was engineer-in-chief of the Alabama Coal and Iron Company.

Fisher, Charles, actor, born in Suffolk, England, in 1816; died in New York city, June 10, 1891. He made his first appearance on the stage at the Princess Theatre, in London, in 1844, and his first American appearance at Burton's Theatre, in New York, as Ferment, in "The School of Reform," on Aug. 30, 1852. During this interval he had played with success in the principal London theatres. His reception in the United States was so cordial that he decided to remain here, and, after making tours of the large cities, he joined the Wallack company in 1861. He there succeeded to the characters of the elder Walcott, playing acceptably as Joseph Surface, Triplet in "Masks and Faces," Graves in "Money," and in "Rosedale," and many other Wallack plays. He joined Augustin Daly's company in 1872, and was active in it till the autumn of 1890, when advancing age caused him to retire permanently from the stage. While with Mr. Daly he played the parts of the first old men, and had but one rival, John Gilbert. Some of his Shakespearean parts were memorable for thorough study and careful acting; in the old comedies he was strong. His Falstaff, Sir Peter Teazle, old Adam in "As You Like It," the Ghost in "Hamlet," Laroque in "The Romance of a Poor Young Man," and the Parson in "The Squire" will long be remembered.

Fitz, Benjamin Rutherford, painter, born in New York city in 1835; died in Peconic, L. I., Dec. 27, 1891. He studied painting in the National Academy of Design and in the Royal Academy of Painting, in Munich, where he took two medals for excellence. In 1885 he returned to New York city, and was at once chosen a professor in the Art Students' League, with which he was connected till his death. He was a member of the Society of American Artists, the American Water-color Society, the Architectural League, the Art Students' League, the National Academy of Design, and of the Salmagundi and Lotos Clubs. During his short art career Mr. Fitz painted portraits of many of the best known people of New York city, and showed particular strength and grace in female portraiture.

Flasch, Kilian, clergyman, born in Retzstadt, Bavaria, July 16, 1831; died in La Crosse, Wis., Sept. 3, 1891. He was brought up on a farm; came with his parents to the United States in 1847; was educated in the College of Notre Dame, Indiana, the Pro-seminary in Milwaukee, and the Seminary of St. Francis; and was ordained a Roman Catholic priest Dec. 16, 1859. He was master of discipline and a professor in the Seminary of St. Francis in 1860-'67; engaged in mission and orphan-asylum work till 1874; then became spiritual director of the seminary and Professor of Moral Theology at St. Francis, and was appointed rector of the college in 1879. On Aug. 24, 1881, he was appointed Bishop of La Crosse, where he remained till his death. He had over 55,000 persons under his care, and over 120 churches, and under his administration many charitable, religious, and educational institutions were established in his diocese.

Flint, Franklin Foster, military officer, born in New Hampshire, April 29, 1821; died in Chicago, Ill., Sept. 15, 1891. He was graduated at the United

States Military Academy, and appointed 2d lieutenant 6th United States Infantry in 1841; was promoted 1st lieutenant, Oct. 12, 1847; captain, Sept. 16, 1856; major 16th United States Infantry, May 14, 1861; lieutenant-colonel 7th Infantry, Oct. 20, 1863; and colonel 4th Infantry, July 8, 1868; and was retired at his own request, April 11, 1862. He served in the Seminole War in Florida, the Kansas disturbances in 1856, the Utah expedition in 1858, the Carson valley expedition in 1860, and in several Indian campaigns in the West. In the civil war he was in command at Louisville in 1862, and afterward of the depot at Alton and of the defenses of Cincinnati.

Florence, William James, an actor whose real name was Bernard Conlin, born in Albany, N. Y., July 26, 1831; died in Philadelphia, Pa., Nov. 20, 1891. He showed a love for acting and for the drama at an



early age. He found his way to New York when he was sixteen years old, where he learned a trade, but devoted all his leisure time to private theatricals and to the affairs of the Murdoch Dramatic Association. His first appearance on the professional stage was made at Richmond, Va., Dec. 4, 1849, as Peter in the "Stranger." In the spring of the following year he became a member of the company at Niblo's Garden, New York, under the management of Brougham and Chippendale, and his first part was Hallagon, in a drama by Brougham called "Home," produced May 13, 1850. When Brougham opened the Lyceum Theatre, New York, afterward Wallack's Theatre, and the Broadway Theatre, on the corner of Broadway and Broome Street, Dec. 23, 1850, Florence appeared in an after-piece called "The Light Guard, or Woman's Rights." He made his first decided hit at this house on April 22, 1851, when he appeared as a red-shirted fireman in a play of the period called "A Row at the Lyceum." During the following season he was at the Broadway Theatre, New York, between Anthony (since Worth) and Pearl Streets, opening on Aug. 30, 1852, as Lord Tinsel in "The Hunchback" to the Julia of Julia Dean and the Master Walter of F. B. Conway. Later he supported Forrest, Mr. and Mrs. Barney Williams, and Mrs. Mowatt. On Jan. 1, 1853, he married Miss Malvina Pray, with whom he was so pleasantly associated in a long and honorable dramatic career. They first played together at the National Theatre, Chatham Street, New York, on June 13, 1853, appearing as the Irish Boy and Yankee Girl, where they met with great success, which followed them on an extensive tour through the United States. In 1856 they first appeared in London, at Drury Lane Theatre, where Mrs. Florence, as a specimen of American help in the "Yankee Housekeeper," amused and

entertained London audiences for a season of fifty nights. Returning to New York, Mr. Florence made his first decided hit in a more serious part, as Bob Brierly in "The Ticket-of-leave Man," produced at Winter Garden, Nov. 30, 1863, Mrs. Florence playing Emily St. Evremonde. The drama ran for one hundred and twenty-five successive nights in New York, and was repeated all over the United States. On Aug. 5, 1867, at the house on Broadway and Broome Street, Mr. Florence produced Robertson's "Caste," an almost perfect play, perfectly played when he was George D'Alroy and Mrs. Florence Polly Eccles, the originals in America. "Caste" was followed at the same house on Sept. 26, 1868, by "No Thoroughfare," when Mr. Florence introduced Obenreizer to the American stage. In 1875 he created Bardwell Slope in B. E. Woolf's "The Mighty Dollar," one of his most enduring successes. Mrs. Florence was Mrs. General Gilflory. In September, 1888, Mr. Florence produced George H. Jessop's "Our Governor," under the title of "Facts," at the Walnut Street Theatre, Philadelphia. Its name was changed in the following season. His part in this piece was Pinto Perkins. His next production was a play by Mr. Woolf, entitled "Our German Professor." In the season of 1888-'89, Mrs. Florence having retired from the stage, her husband entered into an artistic partnership with Joseph Jefferson, which lasted until his death, and afforded rare pleasure to the American theatre-going public. He played Sir Lucius O'Trigger to Jefferson's Bob Acres in "The Rivals," and to the Dr. Pangloss of the same actor Mr. Florence made his final appearance on the stage in the character of Ezekiel Homespun in "The Heir-at-law," at the Arch Street Theatre, Philadelphia, on the night of Nov. 14, 1891. Mr. Florence was an actor of unusually long and varied experience; and in the whole history of the drama in America few men have been so uniformly excellent in so wide a range of parts. He was associated with some of the most prominent figures on the English-speaking stage. He played Richmond and Laertes with the elder Booth, Lucullus and Titus with Edwin Forrest, the Second Gravedigger to the Hamlet of the younger Booth, Cap'n Cuttle to Henry Irving's Dombey, and he supported or was supported by Lawrence Barrett, McCullough, Forrest, John T. Raymond, John L. Toole, Burton, and Brougham. No dramatic contrasts can be greater than those between the son of an hundred earls in "Caste" and the ignorant, humble outlaw of the "Ticket-of-leave Man"; between the American politician in the "Mighty Dollar" and the Swiss adventurer in "No Thoroughfare"; between the bluff, simple, honest old sailor in the dramatization of "Dombey and Son" and the simple, honest, modest young country lad of the "Heir-at-Law"; between the frolicking, fearless fire-laddie of the "Row at the Lyceum," and the fire-eating coward of "The Rivals." In none of these parts was Mr. Florence ever excelled, and in few of them did he find an equal. William Winter, in the epitaph of Mr. Florence, says: "His copious and varied dramatic powers, together with the abundant graces of his person, combined with ample professional equipment and a temperament of peculiar sensibility and charm, made him one of the best and most successful actors of his time, alike in comedy and serious drama. In authorship, alike of plays, stories, music, and song, he was inventive, versatile, facile, and graceful. In art admirable, in life gentle; he was widely known, and he was known only to be loved."

Ford, Gordon Lester, collector, born in Lebanon, Conn., Dec. 16, 1823; died in Brooklyn, N. Y., Nov. 14, 1891. He removed to New York city and became a clerk when twelve years old; was a book-keeper in H. B. Claffin & Co.'s store for two years; studied law in his leisure, and was admitted to the bar in 1850, but never practiced. In 1852 he became President of the New London, Willimantic and Palmer Railroad; in 1856 resigned and settled in Brooklyn, where he ever afterward lived. In 1863, in association with Simeon

B. Chittenden, he founded the Brooklyn "Union," and in 1869-'72 he was collector of internal revenue for the 3d New York District. Mr. Ford became a Liberal Republican in 1872, and was a delegate to the national convention of that party in Cincinnati. In 1873 he became the publisher of the New York "Tribune," and he held the place till 1881. For a short time afterward he was President of the Brooklyn, Flatbush, and Coney Island Railroad, and he then retired from active business. He was either a founder, director, or member of many of Brooklyn's public and financial institutions, including the Art Association, the Academy of Music, the Brooklyn Library, the Long Island Historical Society, the Tree-planting and Fountain Society, the Hamilton Club, and the Lotos, Reform, and Lawyers' Clubs in New York city. Early in life he began collecting books, manuscripts, and autograph letters, and in later years he built a fire-proof room, 50 feet square, in the rear of his dwelling, where he housed his treasures. At the time of his death his library contained about 50,000 volumes, valued at \$500,000, and his autograph letters were valued at \$100,000.

Ford, Melbourne Haddock, stenographer, born in Saline, Mich., June 30, 1849; died in Grand Rapids, Mich., April 20, 1891. He was educated at the Michigan Agricultural College and at the United States Naval Academy; served in the navy in the latter part of the civil war, studied law and was admitted to the bar in 1878, but never practiced; and from 1874 was employed as official stenographer in various State courts. In 1885-'86 he was a member of the Legislature, in 1886 was elected to Congress as a Democrat from the 5th Michigan District, in 1888 was defeated for re-election, and in 1890 was re-elected on the free-trade issue. While in Congress he was a member of the committees on Military Affairs and on Territories, and chairman of the Committee on Importation of contract labor.

Forrest, Catherine Norton, actress, born in England, in 1818; died in New York city, June 16, 1891. She was the daughter of John Sinclair, a popular vocalist, and married Edwin Forrest, the American actor, in June, 1837. She accompanied him to his home in New York city, but their lives were soon embittered with quarrels and domestic unhappiness. No open rupture occurred, however, till 1849, when her husband found a questionable letter addressed to her by an actor of low reputation, and brought suit for divorce, they having then lived apart for two years. Mrs. Forrest, who solemnly declared her entire innocence and maintained it throughout her life, at once entered a counter-suit. Mr. Forrest retained John Van Buren as his counsel, and his wife secured Charles O'Connor. The trial began before Chief Justice Oakley in the New York Supreme Court on Dec. 16, 1851, continued for fourteen years, and was the most remarkable of its kind that had ever taken place in this country. A judgment was obtained in favor of Mrs. Forrest, with an order for the payment of \$3,000 a year alimony. Forrest ordered his lawyer to "go on fighting as long as there was a court to which the case could be appealed." He refused to pay the alimony, and, keeping out of the State for several years, fought off all judgments till 1863, by which time the amount filed against him was immense, every point in every court taken by Mr. O'Connor being sustained. During the years occupied by the lawsuits Mrs. Forrest supported herself by going upon the stage, appearing first at the old Wallack Theatre, as Lady Teazle, in "The School for Scandal," and next in the same rôle at Chestnut Street Theatre, Philadelphia. She then went to England, and afterward to Australia and California, appearing again in England in September, 1857, where she played an engagement at Haymarket Theatre, London, as Beatrice. On her return to the United States she played in various cities, meeting with indifferent success. When the divorce case reached the last court to which it could be appealed, judgment was again rendered against Mr. Forrest, and \$1,000 was added to the amount of alimony. For-

rest yielded to the inevitable, and paid the alimony regularly till his death, Dec. 12, 1872. The full award, \$64,000, was paid to Mrs. Forrest at the close of legal proceedings, and all but \$5,000 was swept away in the payment of expenses. For nearly thirty years prior to her death Mrs. Forrest lived in seclusion. Burying herself in the protection of a busy city, she passed half of this period in absolute retirement from the world, wishing even that her identity should be undiscovered by her neighbors. On the death of Mr. Forrest she had made claim to her dower-right in his estate, and, in 1874, this was granted to her by the executors. She was therefore not without means of support, although she lived for many years in obscurity and died almost unknown.

Fowle, Daniel Gould, jurist, born in Washington, Beaufort County, N. C., March 3, 1831; died in Raleigh, N. C., April 8, 1891. He was graduated at Princeton in 1851, read law and was admitted to the bar in 1854, and settled in Raleigh. He enlisted in the Confederate army as a private in 1861, became a major in the commissary department, organized the 31st North Carolina Regiment, of which he was commissioned lieutenant-colonel, and was captured in the battle of Roanoke Island, Feb. 8, 1862. He was soon paroled, and in October following was elected to the Legislature. After the close of his term he was appointed adjutant-general of the State, served a second term in the Legislature, and in 1865 was appointed by Gov. Holden a judge of the Superior Court. In the Legislature of 1865-'66 he was elected to the same office for life, and he held it till 1876, when he resigned. He was chosen governor for four years in 1888, the term beginning Jan. 1, 1889.

Fox, Henry J., clergyman, born in Hull, England, in 1821; died in Fair Haven, Mass., Nov. 3, 1891. He became a clergyman in the Methodist Episcopal Church, and in early life held pastorates in Hartford, Brooklyn, and New York city. Afterward for three years he was proprietor and President of the Collegiate Institute, at Ashland, N. Y. In 1869 he removed to South Carolina, where for some time he was engaged in planting and in preaching and teaching among the negroes. Subsequently he was elected Professor of English Literature in the University of South Carolina, where he remained till 1874, then returning to New England. He was actively engaged in pastoral work till 1885, when illness compelled retirement. Dr. Fox was author of "The Quadrennial Register of the Methodist Episcopal Church," "The Land of Hope," "The History of our Mission in Cape Palmas," "The Sabbath Psalter," "The Student's Commonplace Book," "The Student's Shakespeare," and other works.

Frayne, Frank I., actor, born in Danville, Ky., March 29, 1839; died in Chicago, Ill., March 16, 1891. He made his first appearance on the stage about 1860, and, as he was an expert marksman, chose sensational plays in which his rifle-shooting produced thrilling spectacles. One of his most popular plays was "Si Slocum," in which he shot an apple off the head of the heroine while his back was turned toward her. While playing it in Cincinnati, on Nov. 30, 1882, he shot and instantly killed the leading lady. The accident was due to a defect in the rifle. Among the accessories of his plays was a small menagerie, including two lions, over which he had remarkable control. He appeared in "Si Slocum" in England in 1876, and was last seen on the stage in Cleveland, O., about three weeks before his death.

Fuller, John Wallace, military officer, born in Cambridge, England, in July, 1827; died in Toledo, Ohio, March 12, 1891. He was the son of a Baptist clergyman, who settled in Peterborough, N. Y., in 1833. In 1840 the son went to Utica, learned the book-selling and publishing business, and established the publishing house of John W. Fuller & Co. While in Utica he became active in politics and twice was elected city treasurer. In 1858 he removed to Toledo, and established a Western branch of his publishing house. At the outbreak of the civil war he was

appointed chief of staff to Gen. Charles W. Hill, and went to the field in western Virginia; and on the organization of the 27th Ohio Volunteers he was made its colonel. In February, 1862, he was sent from Missouri to join Gen. John Pope in his New Madrid campaign, in September following he commanded a brigade at the battle of luka, and in October his "Ohio brigade" checked a charge of the Confederates and broke their line at Corinth. Gen. Rosecranz complimented commander and brigade for their service. Gen. Fuller defeated Forrest's cavalry at Parker's Cross Roads on Dec. 31, 1862; guarded Memphis from April till October, 1863; accompanied Gen. Sherman to Chattanooga; guarded the Nashville and Decatur Railroad in the winter of 1863-'64; captured and fortified Decatur in March, 1864; and as commander of the 1st brigade, 4th division, 16th Corps, took part in the Atlanta campaign. He marched with Sherman to the sea, and at the close of the war was brevetted major-general of volunteers.

Galleher, John Nicholas, clergyman, born in Washington, Mason County, Ky., Feb. 17, 1829; died in New Orleans, La., Dec. 7, 1891. He entered the University of Virginia in 1856, but removed to Louisiana at the end of two years and began the study of law. At the opening of the civil war he entered the Confederate army, and served in several capacities till the war closed. He then returned to his law studies and was admitted to the bar. He afterward went to the General Theological Seminary in New York city, and on June 7, 1868, he took deacon's orders, and priest's orders on May 30, 1869. While a deacon he was assistant minister at Christ Church, Louisville, Ky., and in the following year he became rector of Trinity Church, New Orleans. From 1871 to 1878 he was rector of the Memorial Church in Baltimore, and from 1878 to 1879 rector of Zion Church, New York city. In 1879 he was elected Bishop of Louisiana, and he was consecrated in Trinity Church, New Orleans, Feb. 5, 1880, by Bishops Green, Wilmer, Robertson, and Dudley.

Gamble, John Rankin, lawyer, born in Alabama, Genesee County, N. Y., Jan. 15, 1848; died in Yankton, S. Dak., Aug. 14, 1891. He was brought up on a farm and received a common-school education. In 1862 the family removed to Fox Lake, Wis. He was graduated at Lawrence University, Appleton, Wis., in 1872, studied law at Fox Lake, and was admitted to the bar in 1873; the same year he settled in Yankton to practice, becoming associated in 1875 with his brother, Robert J. Gamble. He was district-attorney for Yankton in 1876-'78; member of the Dakota Territorial House of Representatives in 1877-'79, and of the Legislative Council in 1881-'85; temporary United States Attorney for Dakota in 1878; and was elected to Congress as a Republican in 1890, but did not live to take his seat.

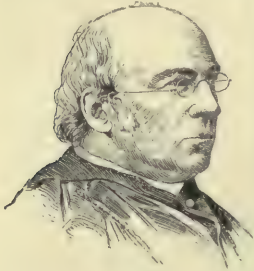
Gartrell, Lucius J., lawyer, born in Wilkes County, Ga., Jan. 7, 1821; died in Atlanta, Ga., April 7, 1891. He was educated at Randolph-Macon College, Virginia, and at Franklin College, Athens, Ga.; studied law with Robert Toombs; was admitted to the bar in 1842; and settled in Washington, Ga., to practice. From 1843 to 1847 he was Solicitor-General of the Northern Judicial Circuit of Georgia, and from 1847 till 1851 was in the Legislature. In 1854 he made his permanent home in Atlanta; in 1856 he was a presidential elector; and in 1857-'61 was a member of Congress, serving on the committees on Expenditures in the Treasury Department, and on Elections, and was a regent of the Smithsonian Institution. On the secession of Georgia he resigned his seat, raised the 7th Georgia Regiment, served in the field as its colonel till 1862, when he was elected to the Confederate Congress, and after one term returned to the army as a brigadier-general, and organized Gartrell's Brigade and commanded it till the close of the war.

Gilbert, John S., naval architect, born in East Haddam, Conn., in 1801; died in Fort Montgomery, near West Point, N. Y., Aug. 12, 1891. While a boy he was sent to New York city, and apprenticed to the

ship-joiner's trade. The work proved congenial, and he soon became expert in it. Realizing the difficulties of repairing large vessels in the water, he began studying the problem how to get them on a dock. Night after night and year after year were spent in calculations and experiments, till at length he solved the problem by inventing the balance dry-dock, now used at all important sea ports in the world. He incorporated the New York Dry-dock Company; built the Erie Basin dry-dock, for many years the largest in the world, and soon had requests to build such docks in many countries. He built docks for the United States Government at Kittery, Me., and at Charleston, S. C., and superintended the construction of the one at Mare Island Navy Yard, San Francisco; spent several years as naval constructor in the service of the Austrian Government, chiefly on important works in the port of Pola; and when sixty years old declined tempting contracts tendered by the Russian Government, because he thought himself too old to assume the responsibility.

Gilmour, Richard, second Bishop of Cleveland, born in Glasgow, Scotland, Sept. 28, 1824; died at St. Augustine, Fla., April 13, 1891. He was a Scotch Covenanter till 1842, when he became a Catholic. He was educated for the ministry at Mount St. Mary's

Seminary, Emmettsburg, Md., and was ordained to the priesthood by Archbishop Purcell in Cincinnati, Ohio, Aug. 30, 1852. After a successful career as pastor in Portsmouth, Ironton, Cincinnati, and Dayton, Ohio, he was consecrated Bishop of Cleveland, April 14, 1872, succeeding Bishop Rappe. In this wide-spread field of labor and responsibility his zeal,



his business tact, and his efforts in behalf of Catholic education had full sway. But he overtaxed his physical strength, and in consequence was obliged to cease work for two years, going to southern France to recuperate his health. On his return, in July, 1878, he resumed his heavy burden of office, and within a few years had the satisfaction of seeing his diocese ranked by common consent among the first in the country in point of order and healthy growth. Under his care the charitable, religious, and educational institutions founded by his predecessor were multiplied and strengthened. Everywhere throughout the diocese handsome and often cathedral-like churches supplanted the unpretentious buildings first erected, so that the diocese of Cleveland has more fine churches in proportion to its population and means than any other in the United States. He compiled a series of readers known as "The Catholic National Readers," which soon attained a large circulation. He also published a Bible history and a collection of school hymns, both largely in use. He had a facile pen, wrote in plain, terse language, and treated with keen logic any subject he discussed. The Catholic press found in him a staunch and liberal supporter. He founded in 1874, and maintained to the end of his episcopal career, the "Catholic Universe," a paper of wide influence. He was a valiant defender of the Catholic faith. In public questions he took a leading part, and he was often called upon to discuss them from the rostrum. Shortly after the assassination of President Garfield a meeting of the citizens of Cleveland was held to express sympathy with their chief magistrate. Bishop Gilmour was one of the speakers, and this was his first appearance before his fellow-citizens in his civil capacity. He also addressed the Congress of Churches, a non-Catholic organization, at its annual meeting held in Cleveland in 1886, his subject being "The Necessity of Religion in Education."

Shortly after his death a meeting in Music Hall, attended by over 5,000 people of all shades of belief, was addressed by many Protestants, lay and cleric, of Cleveland, each paying a tribute to his memory and expressing the loss sustained by the community, country, and religion in the death of the man and prelate in whose honor the meeting was called. His remains repose in the crypt beneath St. John's Cathedral, Cleveland.

Glover, John Montgomery, lawyer, born in Mercer County, Ky., Sept. 4, 1824; died in Newark, Mo., Nov. 12, 1891. He received a collegiate education, but was not graduated, and had practiced law but a short time when the civil war broke out. Early in 1861 he was appointed by President Lincoln a colonel of cavalry, and on Sept. 4 he was commissioned colonel of the 3d Missouri Volunteer Cavalry, with which he served till 1864, when he was forced to resign by failing health. He was collector of internal revenue for the 3d District of Missouri from November, 1866, till March 3, 1867. In 1872, 1874, and 1876 he was elected to Congress from the 12th Missouri District as a Democrat, and he served as chairman of the standing Committee on Expenditures in the Treasury Department and of the select Committee on the Real-Estate Pool and the Jay Cooke Indebtedness, and as a member of the committees on Agriculture and on Military Affairs. After his third term in Congress he retired from public life.

Godshalk, William, jurist, born in East Nottingham, Chester County, Pa., Oct. 25, 1817; died in Doylestown, Pa., Feb. 7, 1891. He received a common-school education; studied in Union Academy, Doylestown; was elected an associate judge of the Bucks County Court in 1871, and held the office five years. He was elected to Congress as a Republican in 1878 and 1880, and defeated for renomination in 1882. While in Congress he served on the committees on Agriculture and Manufactures.

Gooch, Daniel Wheelwright, lawyer, born in Wells, Me., Jan. 3, 1820; died in Melrose, Mass., Nov. 1, 1891. He was graduated at Dartmouth College in 1843, was admitted to the bar in 1846, and began practicing in Boston. In 1852 he was elected to the Legislature, in 1858 to the State Constitutional Convention, and in 1856 to Congress to fill a vacancy from the 7th Massachusetts District. He was re-elected to Congress in 1857, 1859, 1861, 1863, 1865, and 1873, and was one of the most active Republicans on the floor of the House and in committees. During the four years of the investigations of the joint congressional committee on the conduct of the war, he was chairman of the House members, and he personally conducted the inquiry into the Fort Pillow massacre. On Sept. 1, 1865, he resigned his seat in Congress to assume the duties of naval officer of the port of Boston, to which he had been appointed by President Johnson, who also removed him in less than a year. In 1876, he was appointed United States pension agent at Boston, and he held the office till 1886, when he resumed law practice.

Green, Caleb Smith, jurist, born in Mercer County, N. J., in 1819; died in Trenton, N. J., Feb. 20, 1891. He was graduated at the College of New Jersey in 1837, and admitted to the bar in 1843. He was for many years a judge of the New Jersey Court of Errors and Appeals; President of the Trenton Savings Fund Association from 1854; director of the Trenton Banking Company; a trustee of the College of New Jersey; and one of the executors of the estate of John C. Green, of New York, who gave large sums of money to that college.

Grier, David Perkins, grain merchant, born near Wilkesbarre, Pa., in 1837; died in St. Louis, Mo., April 21, 1891. He received a common-school education, and in 1852 removed to Peoria, Ill., where he established himself in the grain business. In association with a brother, he built the first grain elevator in Peoria, and three or four others elsewhere. In 1879 he removed to St. Louis, and had charge of the erection and management of the Union elevator. At the

beginning of the civil war, he recruited a company for the national army and was elected captain. The company became a part of the 8th Missouri Volunteers, and was mustered into service in June, 1861. He took part in the battles of Fort Henry, Fort Donelson, and Shiloh, and the siege and capture of Corinth. On Aug. 25, 1862, he was ordered to report to Gov. Yates at Springfield, Ill., and on arriving there he was commissioned colonel of the 77th Illinois Infantry, which he commanded till the surrender of Vicksburg, July 4, 1863. During the siege of Jackson, Miss., and thence till the return to Vicksburg he was in command of a brigade. He also commanded the 2d brigade, 4th division, 13th Army Corps, at Franklin and New Iberia, La., in November, 1863. In August, 1864, he was placed in command of all the land forces on Dauphin Island, Ala., and after the capture of Fort Gaines he commanded all the land forces, excepting two regiments, that took part in the siege and capture of Fort Morgan. On March 26, 1865, he was brevetted brigadier-general. In Gen. Canby's expedition against Mobile Gen. Grier commanded the 1st brigade, 3d division, 13th Army Corps, and took part in the assaults on Spanish Fort and Blakely, and in the march up the Tombigbee river after the capture of Mobile. On the return from that march he commanded the 3d division of his corps till mustered out on July 10, 1865. For his services in the field he was promoted to the full rank of brigadier-general. After the war he returned to the grain business, and became a vice-president and director of the St. Louis Merchants' Exchange.

Griffin, Gildery Wells, author, born in Louisville, Ky., March 6, 1840; died there, Oct. 21, 1891. He was educated at the University of Louisville, was admitted to the bar in 1861, and after practicing for some years engaged in journalism. In 1871 he was appointed United States consul at Copenhagen; in 1876 at the Samoan Islands; in 1879 at Auckland, New Zealand; and in 1884 at Sydney, Australia. He held the latter office at the time of his death, which occurred while he was on leave of absence. He published a biographical sketch of George D. Prentice (1869); an edition of "Prenticeana" (Philadelphia, 1871); "Studies in Literature" (1871); Life of Charles S. Todd" (1873); "Danish Days" (1874); "A Visit to Stratford" (1875); and "New Zealand, her Commerce and Resources" (Wellington, New Zealand, 1884).

Griffin, Julia Averil, nurse, born in Hudson, N. Y., April 30, 1832; died in Niagara Falls, N. Y., Dec. 17, 1891. She volunteered for service at the front on the first call for nurses in the civil war, and labored with much devotedness till captured at the battle of Manchester. After being paroled, she retired to Niagara Falls, but in 1864 she again went to the front and served till prostrated with asthma. She was elected an honorary member of the Soldiers' and Sailors' Memorial Association in 1876, and was granted a pension by special act of Congress in 1888. For many years the Grand Army posts dipped their flags in salute to her while on their Decoration Day parades.

Grinnell, Josiah Bushnell, capitalist, born in New Haven, Ct., Dec. 22, 1821; died in Marshalltown, Iowa, March 31, 1891. He took a preparatory course in Middlebury College, was graduated at Auburn Theological Seminary in 1847, was ordained a Presbyterian clergyman, and held pastorates in Union Village, N. Y., Washington, D. C., and in a Congregational church in New York. After a brief experience as a clergyman he removed to Iowa, where he engaged in general farming, and became the largest wool-grower in the State. In 1854 he purchased 6,000 acres, laid out the town of Grinnell, and deeded the site to trustees for the founding of an educational institution. This became Grinnell University, and a few years ago was consolidated with Iowa College. In 1856 he supported the presidential canvass of John C. Frémont, after having written the State address at the organization of the Republican

party in Iowa, and was elected to the State Senate on his personal platform of "free schools, no slavery, and limitation to whisky." He served four years in the Senate, was a delegate to the Republican National Convention that nominated Abraham Lincoln in 1860, and was appointed a special agent of the United States Post-office for the Northwest in 1861. In 1862 and 1864 he was elected to Congress as a Republican, and he served on the committees on Post-offices and Post-roads, on Freedmen, on Agriculture, and on Postal Railroad to New York. Subsequently he was appointed referee in the disputed title of 800,000 acres of land in Cherokee and Crawford Counties, Kan. He supported Horace Greeley for President in 1872, and was appointed Commissioner of the United States Bureau of Animal Industries in 1864. He was an influential member of the American Agricultural Association, President of the St. Louis and St. Paul Railroad, which, on completion, became a part of the Iowa Central system, President of the State Horticultural Society, President of the First National Bank of Marshalltown, and an extensive breeder of various kinds of live stock. He published many pamphlets on agricultural, industrial, and kindred topics, including "Home of the Badgers" (1845), and "The Cattle Industries of the United States" (1884).

Gundry, Richard, physician, born in Hampstead, near London, England, in 1829; died in Baltimore, Md., April 23, 1891. He received a private-school education; removed with his parents to Simcoe, Ontario, Canada, in 1845, and began studying medicine there; was graduated in medicine at Harvard in 1851, and settled in Rochester, N. Y., to practice. He remained there three years, then removed to Columbus, Ohio, and was appointed assistant physician in the Ohio State Lunatic Asylum in 1855, at the same time taking the chair of Materia Medica and Mental Diseases in the Starling Medical College. In 1858 he was transferred to the Southern Ohio Insane Asylum, at Dayton, as assistant physician; in 1861 was appointed superintendent; and in 1872 was placed in charge of the completion and organization of the State Asylum, at Athens. He was elected Professor of Materia Medica and Mental Diseases in the College of Physicians and Surgeons, in Baltimore, in 1882, and also was appointed Superintendent of the Maryland Hospital for the Insane, at Spring Grove, holding both offices till his death. Dr. Gundry was a conspicuous advocate of the system of non-restraint in the management of the insane. He was President of the Harvard Association and a manager of the State Home for the Feeble-minded; and was author, among many other publications, of "Puerperal Insanity," "Non-restraint in the Care of the Insane," and "Some Problems of Mental Action."

Haight, Charles, lawyer, born in Colt's Neck, N. J., Jan. 4, 1838; died in Freehold, N. J., Aug. 1, 1891. He was graduated at Princeton in 1857; studied law, was admitted to the bar, and became law partner of Joel Parker. He was appointed brigadier-general of militia in 1861. In 1861-'62 he was a member of the Legislature, and in his second term Speaker of the House. Throughout the civil war he rendered the national cause important service in raising, equipping, and dispatching State troops to the seat of war. In 1867 and 1869 he was elected to Congress as a Democrat from the 2d New Jersey district, and since 1879 he had been prosecutor for Monmouth County.

Haines, Alanson Austin, clergyman, born in Hamburg, N. J., March 18, 1830; died there Dec. 11, 1891. He was a son of Daniel Haines, ex-Governor and ex-Supreme Court judge of New Jersey; was graduated at Princeton in 1857, and at the Theological Seminary in 1858; and held pastorates in Berlin, Md., and Amagansett, L. I., till 1862. He was then appointed chaplain of the 15th New Jersey Volunteers, with which he served till the close of the war, and participated in 37 battles. His life was in peril many times, and he frequently went into the thickest of a fight to care for the wounded and dying, when experienced officers hesitated to detail men for that

duty. He was collected and fearless in battle, a favorite among officers, and beloved by his men. After the war he was called to the pastorate of the Presbyterian church in Hamburg, which he held till July, 1890, when failing health forced him to resign. Chaplain Haines, who in early life had studied and practiced civil engineering, served as engineer of the United States Palestine Exploration Society in 1873 and 1876, and, visiting the Holy Land, Egypt, and Turkey, made numerous maps, sketches, and transcripts of rock inscriptions. He published "Explorations in Moab and Sinai" and "History of the Fifteenth Regiment of New Jersey Volunteers" (New York, 1883). He was a member of the New Jersey Historical Society and of the Grand Army of the Republic, and posts of veterans for miles around followed him remains to the grave.

Hall, Benjamin Franklin, jurist, born in Whitehall, N. Y., July 23, 1814; died in Auburn, N. Y., Sept. 6, 1891. He began the study of law in Whitehall, and continued it in the office of William H. Seward in Auburn, whither he removed in 1835, and was admitted to the bar in 1837. From December, 1850, till February, 1852, he was employed in Washington in revising and compiling the official opinions of attorney-generals of the United States, and in 1852 was elected Mayor of Auburn. In April, 1861, on the recommendation of Secretary Seward, President Lincoln appointed Mr. Hall chief justice of the newly created Territory of Colorado, and during his three years' tenure of the office he did much to establish the present judicial system of the State. He was appointed chief of the Bureau of Commercial Statistics in the State Department at Washington in 1867, and after he retired from that office failing health forced him to seek private life. Judge Hall was an enthusiastic student of history and a writer of much clearness and power. His publications include "The Republican Party and its Candidates" (1856); an earlier law digest for the use of Western settlers entitled "The Land-owner's Manual"; and many political and historical pamphlets.

Hamilton, Charles Smith, military officer, born in Western, Oneida County, N. Y., Nov. 16, 1822; died in Milwaukee, Wis., April 17, 1891. He was graduated at the United States Military Academy and appointed 2d lieutenant in the Second United States Infantry in 1843; served through the Mexican War, taking part in the battles of Monterey, Contreras, Churubusco, and Molino del Rey; was brevetted captain for gallantry in the war; and after a period of frontier duty, he resigned from the army in 1853 and engaged in farming and in manufacturing flour in Fond du Lac, Wis. On May 11, 1861, he was appointed colonel of the Third Wisconsin Volunteers, and on May 17 he was promoted brigadier-general. He took part in the siege of Yorktown and the chief military operations in Virginia in 1862, and was promoted major-general of volunteers on Sept. 19 of that year. Transferred to the Army of the Mississippi, he commanded a division at Corinth and Iuka, and from October, 1862, till January, 1863, commanded the left wing of the Army of the Tennessee in Gen. Grant's flank movement to Oxford, Miss. On April 13, 1863, he resigned his commission, and resumed manufacturing in Fond du Lac, subsequently settling in Milwaukee. In 1863 he became a regent, and in 1866 President of the Board of Regents of the Wisconsin State University, and from 1869 till 1877 he was United States marshal for Wisconsin.

Hamlin, Hannibal, statesman, born in Paris, Me., Aug. 27, 1809; died in Bangor, Me., July 4, 1891. His paternal grandfather was an officer in the Continental army. He received his early education in the district school, and was prepared for college in Hebron Academy. Circumstances compelling him to give up his proposed college course, he began teaching, and with the money so acquired purchased books and undertook the study of law. The death of his father obliged him again to abandon study in order to take charge of the home farm. Two years after the death

of his father he, in association with Horace King, purchased a weekly paper, "The Jeffersonian," but soon afterward he sold his interest to his partner and resumed law study. In 1833 he was admitted to the bar, and about the same time began to be active in politics as a Democrat. He was a member of the Legislature in 1836-'40 and in 1847, and Speaker in 1837, 1839, and 1840. He was elected to Congress in 1842 and 1844. In 1848 he was elected United States Senator to fill a vacancy caused by the death of Senator Fairchild, and in 1851 was re-elected for a full term. In 1856 his strong antislavery convictions led him to sever his connection with the Democratic party and become a Republican, and in the same year he was elected Governor of Maine, resigning his seat in the United States Senate in 1857.

Within a fortnight he was again elected Senator, and resigned the office of Governor. In 1860 he was elected Vice-President of the United States on the ticket with Abraham Lincoln, and, resigning his seat in the Senate, he presided over that body from March 4, 1861, till March 3, 1865. In 1864 his name was proposed for renomination, but, as it was deemed politic to place on the ticket the name of a man representing the loyal element of the Southern States, the nomination was given to Andrew Johnson. After Mr. Hamlin's death the question of his availability and of President Lincoln's preference for the second place on the ticket was the subject of much newspaper discussion. In 1865 President Johnson appointed him Collector of the Port of Boston, where he remained a year. In 1868 and 1875 he was re-elected United States Senator, and in 1881-'83 he was United States minister to Spain, resigning in the latter year to retire to private life after a public service of nearly fifty years. He was a regent of the Smithsonian Institution in 1861-'65 and 1870-'82, and for twelve years he was dean of the board. He had also been a trustee of Colby University (formerly Waterville College) for twenty years.

Hancock, John, educator, born in Ohio, Feb. 19, 1825; died in Columbus, Ohio, June 1, 1891. He received a common-school education, and supplemented it with continuous private study; taught for several terms in country schools; became first assistant in a district school in Cincinnati in 1852, and subsequently principal; and in 1867 was elected superintendent of the public schools of that city. He held this office several years, resigning to become superintendent of schools in Dayton, and after serving there ten years he accepted a similar office in Chillicothe. While in Chillicothe he was appointed by Gov. Foraker State School Commissioner of Ohio, which office he held until his sudden death. He had been a member of the Ohio Teachers' Association since 1852, and its president since 1860; a member of the National Educational Association since 1858, its treasurer in 1872-'74, and president in 1879; and a member of the National Council of the National Association since its establishment in 1881.

Hand, Daniel, philanthropist, born in Madison, Conn., in 1801; died in Guilford, Conn., Dec. 17, 1891. He received a district-school education, and in 1818 went to Augusta, Ga., with his uncle, Daniel Meigs, a merchant doing a large business in that city and in Savannah. He began his business career as a clerk in his uncle's store, and in time succeeded to the business. About 1846 it had grown so large that he took a tried clerk, George W. Williams, into partnership, and established a branch house in Charleston under the management of Mr. Williams. At the beginning of the civil war Mr. Hand, temporarily in New Orleans, was arrested by the Confederates as a spy and placed



under parole. Soon afterward he was nearly mobbed in Augusta, while in Charleston the sequestration of his property was averted only by the influence of his partner. Mr. Hand lived in Asheville, N. C., under parole during the war, and after its close removed to Guilford, Conn., never questioning his partner's integrity. About 1880 Mr. Williams visited Mr. Hand, rendered a full statement of the business since the beginning of the war, and gave him securities for \$608,000, Mr. Hand's share of the profits. In October, 1888, Mr. Hand, who had carefully invested the money, gave to the American Missionary Association the principal and its earnings, \$1,000,894, for a fund for educating Southern negroes. To this sum, the largest up to that time ever given to benevolence by a living American, Mr. Hand added by bequest \$300,000 for immediate use and \$200,000 in reversion after the death of family legatees.

Hanna, Bayless W., lawyer, born in Troy, Ohio, March 14, 1830; died in Crawfordsville, Ind., Aug. 2, 1891. When six years old he removed with his parents to Crawfordsville, where he was graduated at Wabash College. He studied law with Joseph E. McDonald and Josiah Winchester; was admitted to the bar in Natchez, Miss., in 1855; returned to Crawfordsville to practice, and was elected prosecuting attorney of the county in 1858. In the following year he removed to Terre Haute. He was elected to the Legislature as a Democrat in 1862, to the Senate in 1864, and to the office of Attorney-General of the State in 1870; and in 1872, 1876, 1880, and 1884 he was delegate-at-large from his State to the National Democratic Conventions. In the convention of 1876 he was chairman of the Committee on Permanent Organization. He was presidential elector-at-large in 1872 and 1884, and after President Cleveland's inauguration he was appointed United States minister to the Argentine Republic.

Hardeman, Thomas, commission merchant, born in Eatonton, Ga., Jan. 12, 1825; died in Macon, Ga., March 6, 1891. He was a son of Thomas Hardeman, one of the pioneers of Georgia; was taken to Macon while an infant; was graduated at Emory College in 1845, and admitted to the bar in 1846, but engaged in the commission business in preference to the practice of law. In 1853, 1855, and 1857 he served in the Legislature as an old-time Whig. On the breaking up of that party he joined the Union party. In 1859 he was elected to Congress, where he was also a member of the Committee on Mileage, and served till the secession of his State. He then entered the Confederate army, and became captain of the Floyd Rifles, major of the Second Georgia Battalion, colonel of the Forty-fifth Georgia Regiment, and adjutant-general on the staff of Gen. Gustavus W. Smith, and was severely wounded at Cold Harbor. In 1863, 1864, and 1874 he was a member and Speaker of the State House of Representatives; in 1872 was a delegate to the Liberal Republican Convention; served four years as President of the State Democratic Convention and as chairman of the State Executive Committee; and in 1883-85 was Representative-at-large in Congress and member of the Committees on Territories and on Expenditures in the State Department.

Hart, Tony, see CANNON, ANTHONY.

Hasselquist, Tuve Nilsson, educator, born in Hasslaröd, Sweden, March 2, 1816; died in Rock Island, Ill., Feb. 4, 1891. He was graduated at the University of Lund, Sweden, and ordained in the Lutheran Church in 1839. After serving for several years as assistant pastor in various parishes in his native country, he became pastor of a Swedish Lutheran congregation in Galesburg, Ill., in 1862. In 1865, while engaged in his pastoral duties, he established a religio-political journal, from which have been developed "Hemlandet," a political weekly published in Chicago, and "Augustana," a religious weekly, published in Rock Island, Ill. Of the latter journal he continued editor-in-chief to the time of his death. He was present at the organization of the Evangelical Lutheran Augustana Synod in 1860, and was its first

president, to which office he was annually re-elected until 1879. In 1866 he was elected President of Augustana Theological Seminary, which has since become Augustana College and Theological Seminary. He continued to serve as president of this institution up to the time of his death. His chief literary work is a commentary on Ephesians.

Hatfield, Robert M., clergyman, born in New York in 1818; died in Evanston, Ill., April 1, 1891. He received a common-school education, prepared for the ministry at an early age, and was admitted to the Providence Conference of the Methodist Episcopal Church in 1841. He held appointments in New York city, Brooklyn, Baltimore, Chicago, and Philadelphia; was transferred to the Rock Island Conference in 1877; was a delegate to the General Conferences of 1864, 1876, 1880, and 1884; and in 1889 became financial agent of the Northwestern University and Science Hall at Evanston.

Havemeyer, Frederick Christian, manufacturer, born in New York city, Feb. 5, 1807; died in Throgs Neck, Westchester County, N. Y., July 28, 1891. He was a son of Frederick C. Havemeyer, who, with his brother, William F. Havemeyer, came to the United States from Buekeburg, Schaumburg-Lippe, Germany, in 1802, and established a sugar refinery in Vandam Street, New York city. Frederick Christian, Jr., was educated at Columbia College, but left before graduation to form with his cousin the firm of W. F. & F. C. Havemeyer, as successors to their fathers' business. The cousins conducted it with large success till 1842, when both retired and were succeeded by their brothers, Albert and Diedrich. Frederick's father died in 1841, leaving a large estate, and Frederick himself had accumulated considerable property. The care of the two estates occupied his attention till 1855, when he re-entered the sugar firm, with which, under its various corporate names, he remained until his death. He was one of the original trustees of the New York Public School Society, for many years an active member of the old volunteer fire department, and a founder of the Century Club.

Hearst, George, capitalist, born in Franklin County, Mo., Sept. 3, 1820; died in Washington, D. C., Feb. 28, 1891. He received a public-school education; was brought up on his father's farm; went to California in 1850, and began working in the mines; subsequently engaged in buying, selling, and trading claims; and in 1859, when almost penniless, joined the throng of miners who made the memorable rush to the Washoe region, of which Virginia City is now the center. He there watched his opportunities for trading claims, made and lost considerable money, and was one of the few men who, striking a rich lead, followed it closely, and became very wealthy. Subsequently he entered a firm of mining operators, in San Francisco, which secured control of large and valuable properties in California, Utah, Dakota, Montana, and Colorado; and he became widely known as a successful locator and developer of gold and silver mines. Within a few years he was the owner of mines and mills that gave employment to 2,000 men, and his quartz mills crushed 1,000 tons of ore daily. He also engaged largely in stock-raising and in general farming with similar success. In 1865 he was elected to the State Legislature; in 1866 he was appointed United States Senator to fill a vacancy, and in the same year he was elected for the full term, beginning March 4, 1867. In the Senate he was a member of the standing committees on Indian Affairs, on Mines and Mining, and on Revolutionary Claims, and of the select committees to inquire into all claims of citizens of the United States against the Government of Nicaragua, and on the President's message transmitting the report of the Pacific Railway Commission. He was the owner of several noted race-horses. His fortune was estimated at \$20,000,000.

Hereford, Frank, lawyer, born in Fauquier County, Va., July 4, 1825; died in Union, Monroe County, W. Va., Dec. 23, 1891. He received a collegiate edu-

cation; studied and practiced law; removed to California, and was district-attorney of Sacramento County from October, 1855, till October, 1857; and, settling in Union, W. Va., was elected to Congress from the 3d West Virginia District, as a Democrat, in 1870, 1872, and 1874, and was elected United States Senator to fill the vacancy caused by the death of Allen T. Caperton, in 1876. In the House he was chairman of the Committee on Claims and a member of that on Militia, and in the Senate he was chairman of the Committee on Mines and Mining and a member of that on Claims.

Herndon, William Henry, lawyer, born in Greensburg, Ky., Dec. 28, 1818; died near Springfield, Ill., March 18, 1891. In 1820 his parents removed to Illinois, where he was educated and admitted to the bar. On Sept. 20, 1843, he formed a law partnership with Abraham Lincoln, which continued in fact till Mr. Lincoln's election to the presidency, and in form till his death, for when the President-elect was about leaving Springfield to be inaugurated he entreated his partner to let his name remain on the office sign till he returned from Washington. So strong was the personal friendship and confidence of the two men that to the day of the assassination Mr. Herndon transacted all the business of the firm in the name of Lincoln & Herndon. After Mr. Lincoln's death, Mr. Herndon gradually withdrew from law practice and public life. He published a "Life of Abraham Lincoln," a revised and enlarged edition of which with an introduction by Horace White is in press.

Hilgard, Julius Erasmus, physicist, born in Zweibrücken, Bavaria, Jan. 7, 1825; died in Washington, D. C., May 8, 1891. He was the eldest son of Theodore E. Hilgard, an eminent German jurist and writer, and came to the United States with his father in 1835,



settling in St. Clair County, Ill. His education was obtained direct from his father until he was eighteen, when he removed to Philadelphia in order to follow special studies in civil engineering. While so engaged he attracted the notice of Alexander D. Bache, who in 1845 became Superintendent of the United States Coast Survey, and at once invited young Hilgard to become one of his assistants. His enthusiasm and interest in the work led to his recognition as one of the leading spirits in the survey, and he gradually rose until he became assistant in charge of the bureau in Washington. This place he held until 1881, when, upon the death of Carlile P. Patterson, he was appointed superintendent, which post he then held until 1885, when, on the advent of a new administration, after a faithful service of forty years, he was suspended, and

then allowed to resign. His age and failing health led to charges of incapacity, which a committee of investigation were unable to sustain. Alexander Agassiz, who declined to succeed him, in commenting on the behavior of the committee of investigation said: "Their dictum upon the late superintendent (Mr. Hilgard), at least as far as his professional career is concerned, is answered by his position as an investigator in the scientific world." While holding the place of assistant he had charge of the construction and verification of the standards of weights and measures, and was for some time engaged in preparing metric standards of great precision for distribution to the several States. In this connection he was appointed a delegate to the International Metric Commission, which met in Paris in 1872, and a member of the executive committee of the International Bureau of Weights and Measures. At the time of its organization, Mr. Hilgard was invited to become director of this bureau with its headquarters in Paris, but he declined. Mr. Hilgard's scientific work was chiefly in connection with his practical labors, consisting of researches and the discussion of results in geodesy and terrestrial physics, and in perfecting methods and instrumental means connected with the same. In 1872 he executed a telegraphic communication of the longitude between Paris and Greenwich, which superseded the value previously admitted, correcting it by nearly half a second of time. The magnetic survey of the United States, prosecuted at the expense of the Bache fund, derived from a bequest of Alexander D. Bache to the National Academy of Sciences, was placed by the Academy under the direction of Mr. Hilgard, and he also rendered great service to scientists throughout the United States by lending to them valuable instruments for original research. He was one of the original members of the National Academy of Sciences and long its home secretary. Mr. Hilgard joined the American Association for the Advancement of Science in 1850, and in 1874 was elected to be its presiding officer. He was a member of the American Philosophical Society, an associate fellow of the American Academy of Arts and Sciences, as well as a member of other scientific bodies in this country and abroad. His publications include papers, lectures, and addresses, which have appeared principally in the annual reports of the United States Coast Survey. His lecture on "Tides and Tidal Action in Harbors," delivered before the American Institute, in New York, was regarded as remarkable for its lucid and terse exposition of principles without the aid of mathematical symbols. Of the value of his life-work in connection with the United States Coast Survey it is said: "He brought into that branch of the public service a rare combination of culture, zeal, knowledge of the world, and executive ability, and no man living will claim to have done more than he did for the character and efficiency of the survey."

Hill, Joshua, lawyer, born in Abbeville District, S. C., Jan. 10, 1812; died in Madison, Ga., March 6, 1891. He received a liberal education and was admitted to the bar in South Carolina, and removed to Madison, Ga., in 1840. In 1844 he was a delegate to the Whig National Convention, and in 1857 and 1859 was elected to Congress, where he served as a member of the committees on Public Lands and on Foreign Affairs. While he was serving his second term his State adopted the ordinance of secession, and, being a strong Union man, and believing that he therefore could not properly represent his constituents, he resigned his seat, and lived quietly at home till the close of the war. He then allied himself with the Republican party, and used all his influence to secure the speedy political rehabilitation of the State. In 1866 he was appointed collector of the port of Savannah, and in the following year register in bankruptcy at the same place, but declined both offices. In July, 1868, he was elected United States Senator as a Union Republican, but he was not permitted to take his seat till Jan. 30, 1871, when he was appointed a mem-

ber of the committees on Privileges and Elections and on Pensions. He was a member of the State Constitutional Convention in 1877, and then retired.

Hill, Thomas, clergyman, ex-President of Harvard University, born in New Brunswick, N. J., Jan. 7, 1818; died in Waltham, Mass., Nov. 2, 1891. He was of English parentage, and was left an orphan when very young. When he was twelve years old he was apprenticed to a printer for three years. He then attended Lower Dublin Academy, near Philadelphia, for one year, and was next apprenticed to a New Brunswick apothecary. He was graduated at Harvard in 1846, and at the divinity school in 1848. The same year he became pastor of a Unitarian church in Waltham, where he remained fourteen years. In 1859 he followed Horace Mann as President of Antioch College, Ohio, and was at the same time in charge of the Church of the Redeemer, at Cincinnati. In 1862 he was made President of Harvard, but he resigned in 1868 on account of failing health and removed to Waltham. In 1871 he accompanied Louis Agassiz on his coast survey expedition to South America, and on his return accepted the charge of the Unitarian church at Portland, Me., which he held until his death. In June 1, 1891, he delivered a course of lectures at Meadville, Pa., Theological School, and while there he contracted the disease that resulted in his death. While President of Harvard he advocated the elective system, the first steps toward adoption of which were made at that time. He was a noted mathematician, and among several mathematical machines that he invented is the occultator, by which occultations visible west of the Mississippi were calculated for publication in the American Nautical Almanac for several years. From Harvard he received the degree of D. D. in 1860, and from Yale LL. D. in 1868. His talents were many and varied, and, in the opinion of those who knew him intimately for many years, he was capable of attaining almost the highest excellence in the exercise of any one that might have claimed the full employment of his powers. He delivered Phi Beta Kappa addresses at Harvard on "Liberal Education," 1858, and at Antioch on "The Opportunities of Life," 1860. He edited Ebert's "The Stars and the Earth," 1849 (new editions, Boston, 1874 and 1882). He was author of "Christmas, and Poems on Slavery" (1843); "Arithmetic" (1845); "Geometry and Faith" (New York, 1849; revised editions, 1874, Boston, 1882); "Curvature" (1850); "First Lessons in Geometry" (1854); "Second Book in Geometry" (1862); "Jesus the Interpreter of Nature and other Sermons" (1859); "Statement of the Natural Sources of Theology, with Discussion of their Validity and of Modern Skeptical Objections" (Andover, 1877); "Practical Arithmetic" (1881); "In the Woods and Elsewhere," verse (Boston, 1888).

Hitchcock, Robert S., educator, born in Newport, R. I., in 1818; died in Hollidaysburg, Pa., April 6, 1891. He was graduated at Amherst College in 1848, studied at Andover Theological Seminary, and after being ordained held pastorates in New Bedford and Boston, Mass. On retiring from his Boston charge he applied himself to educational work. He conducted for some time a classical school in Baltimore, served during the civil war as chaplain of the Second Maryland Regiment, and immediately after the war opened a classical school for boys in Lexington, Ky. In 1877 he was elected Professor of Latin in Center College, Danville, Ky., and in 1881 became principal of the Hollidaysburg Female Seminary and a member of the Huntingdon Presbytery, with both of which he remained till his death.

Hobbs, Alfred Charles, manufacturer, born in Charlestown, Mass., Oct. 7, 1812; died in Bridgeport, Conn., Nov. 6, 1891. He passed his early boyhood on a farm; undertook in turn to become a clerk, wood carver, carriage-maker, sailor, tin-plate worker for coach and harness trimmings, and glass cutter; and about 1840 removed to New York city and opened a store for the sale of locks and fire-proof safes. During the eight years of his work at glass cutting he

made a specialty of glass door-knobs, and patented a method of fastening the knobs in the sockets by which they were attached to the locks. Realizing that the bank and vault locks of the day were defective, he designed a lock which he claimed could not be picked, and, to show at once the necessity for and the utility of it, he made himself a fine set of tools for opening vaults and safes, and visited the large banks and public offices to introduce his own lock. His first call was at a bank in Stamford, Conn., whose officers promised to buy one of his locks if he succeeded in opening the locks on the outside of the bank door and those on the vault door in two hours. He opened the outside door and three locks on the vault door in twenty-three minutes, and sold his first lock. This feat he shrewdly advertised, and from that time, January, 1847, till 1851, he spent his whole time in visiting banks and proving the insecurity of their locks. In 1848 a Mr. Woodbridge, of Perth Amboy, N. J., published an offer of \$500 to any one who would open his lock, then on one of Herring's safes in the reading-room of the Merchants' Exchange, New York city, within thirty days. Mr. Hobbs came directly to New York, begun examining the lock at 9 o'clock in the evening, mastered its secret at 11.30 o'clock, requested Mr. Woodbridge to be present with witnesses the next morning at 10 o'clock, and at the time appointed inserted a wire and opened the lock immediately. In April, 1851, he went to London, in answer to a published offer of 200 guineas to any one who could open without a key a wonderful lock made by Brahma. In the presence of a large committee Mr. Hobbs spent fifty-one hours in working on the lock, and then, with a quick movement of one of his tools, threw the bolts and opened the door. Later he examined a lock made for a safe in the banking office of Brown, Shipley & Co., which it was believed could only be opened by a person knowing the special combination of letters indicated on a dial on the door. Mr. Hobbs desired to try it, and after the door had been locked, placed himself with his back to the dial, and with one hand behind him unlocked the safe while Mr. Brown was explaining why it could not be done. His success in opening locks in London gave him such fame that he found it advantageous to open a factory for the manufacture of his own locks there, and he soon commanded a handsome business. He remained in London till 1860, then took charge of the Howe Sewing Machine Works in Bridgeport, and in 1866 became superintendent of the Union Metallic Cartridge Works in the same city, with which he remained until his death. Mr. Hobbs received the Telford medal awarded by the English Institute of Civil Engineers for his successful lock-picking in London, and was elected a member of the Society of Arts.

Hodge, Caspar Wistar, educator, born in Princeton, N. J., Feb. 21, 1830; died there, Sept. 27, 1891. He was a son of the late Rev. Dr. Charles Hodge; was graduated at Princeton in 1848, and at the Theological Seminary in 1853; and was a tutor in the college in 1850-'51, and a preparatory teacher in Princeton in 1852-'53. In 1853-'54 he was stated supply in a Presbyterian church in Williamsburg, N. Y.; in 1854-'56 its pastor; and in 1856-'60 held a pastorate at Oxford, Pa. In 1860 he was appointed Professor of New Testament Literature and Biblical Greek in Princeton Theological Seminary, and he held the chair till his death. He had prepared for use in his class-room, but not for publication, valuable courses of lectures on "Gospel History" and "Apostolic History," and commentaries on Romans and Colossians, besides other works of a like character.

Hoffman, Ogden, jurist, born in New York city, Oct. 16, 1822; died in San Francisco, Cal., Aug. 9, 1891. He was graduated at Columbia College, and admitted to the bar, and became well known for his eloquence and success as a criminal lawyer. While practicing in New York city, his most famous case was the defense of a young society man named Rotenson, for the murder of the pretty but frail Ellen Jewett, of

whom he had grown tired. It was believed at the time of the trial that Mr. Hoffman, before consenting to act as Robinson's counsel, had made him reveal the actual facts of the murder, and also confess his guilt. Mr. Hoffman's success in defending the client who had confessed his guilt arose from his attacking the credibility of the witnesses with all the eloquence and ability he could command, and the acquittal of the prisoner produced a sensation that is still remembered. Robinson soon disappeared, and his counsel, whose manner of defense had been warmly criticised in the periodicals and by members of the bar, removed to California, and settled in San Francisco in 1850. In the following year he was appointed judge of the United States district court for the Northern District of California, and he held the office continuously till his death.

Hopkins, John Henry, clergyman, born in Pittsburg, Pa., Oct. 28, 1820; died near Hudson, N. Y., Aug. 13, 1891. In 1831, when his father became Bishop of Vermont, the family removed to Burlington in that State, and the son was graduated at the University of Vermont in 1839. He was a tutor in the family of Bishop Elliott at Savannah, Ga., from 1842 to 1844, and in 1850 was graduated at the General Theological Seminary in New York city, and ordained deacon the same year. He founded the "Church Journal" in February, 1853, and continued its editor and proprietor till May, 1868. In 1872 he was ordained priest, and he was for four years rector of Trinity Church, Plattsburg, N. Y. In 1876 he became rector of Christ Church, Williamsport, Pa., an office which he filled for eleven years. In 1887 he was elected to the chair of the Evidences of Revealed Religion in the General Theological Seminary. He was the author of many hymns and carols, among them a very popular one entitled "We Three Kings of Orient are," and many pamphlets and reviews. His latest work was done for the "Church Review." He published a life of his father (1868); "The Canticles noted" (1866); "Carols, Hymns, and Songs" (4th ed., 1881); "Poems by the Wayside" (1883). He also edited his father's "The Pope not the Antichrist" (1868); "The Collected Works of Milo Mahan, with a Memoir" (3 vols., 1875); and Bishop Young's "Great Hymns of the Church" (1887).

Hopkins, Robert, clergyman, born in Bourbon County, Ky., in April, 1798; died in Sewickley, Pa., March 3, 1891. He was apprenticed to a cooper when thirteen years old, was soon afterward with his parents driven by the Indians into Ohio, where he was educated; and in 1825 joined the Pittsburg Conference of the Methodist Episcopal Church. He served as presiding elder for nineteen years; came within one vote of being elected bishop, despite his protests, in 1845; was five times a delegate to the General Conference of the Church; and was familiarly known as "Bishop" Hopkins. He was a pioneer in American Methodism, and his first charge was the Grand Rapids circuit, which was about 200 miles in extent, and required a month to travel it. He preached every day, and received for the first three years of his ministry \$63 in cash, a wagon, a scarf, and a pair of socks.

Horton, Nathaniel Augustus, journalist, born in Salem, Mass., April 16, 1830; died there, Dec. 14, 1891. He was graduated at the English High School, Salem, in 1846; was apprenticed to the printer's trade in the office of the "Salem Gazette"; was admitted to partnership in the publishing firm and became chief editor in 1854; and with his son, William A. Horton, formed the firm of N. A. Horton & Son in 1888. He was originally a Whig, and on the organization of the Republican party he espoused its mission and was faithful to it till death. In 1861-'62 he was a member of the Salem Common Council; in 1860, 1879, and 1880 of the State House of Representatives; and in 1881-'82 of the State Senate. He was also a delegate to the National Republican Convention in 1880. Mr. Horton was a founder and for two years President of the Massachusetts Press Association, an original and life trustee of the Salem Public Library, president

for many years of the Essex Conference of Liberal Christian Churches, and a member of the Essex Institute and the Essex Agricultural Society.

Houghton, George Washington Wright, poet, born in Cambridge, Mass., Aug. 12, 1850; died in Yonkers, N. Y., April 1, 1891. He was educated at the Cambridge High School and the Massachusetts Institute of Technology, and from 1869 till his death was editor of "The Hub," a New York journal devoted to the carriage-making interests. He was a frequent contributor to periodicals, and published "The Legend of St. Olaf's Kirk" (Boston, 1881); "Niagara and other Poems" (1883); and, under the pen-name of Chauncey Thomas, a story called "The Crystal Buton, or Adventures of Paul Prognosis in the Fortyninth Century" (1891).

Houk, Leonidas Campbell, lawyer, born in Sevier County, Tenn., June 8, 1836; died in Knoxville, Tenn., May 25, 1891. He had less than three months' schooling, and not only educated himself, but read law for the prescribed term while working at the cabinet-maker's trade. He was admitted to the bar when twenty-three years old, practiced with success till the opening of the civil war, was a delegate to the Loyal East Tennessee Convention early in 1861, and in August following entered the national army as a private. The same year he was promoted to lieutenant in the 1st Tennessee Infantry, and in February, 1862, he was commissioned colonel of the 3d Tennessee Infantry. In April, 1863, he was compelled by failing health to resign, and was then connected with the loyal press till July, 1864. In 1864 he was a candidate for presidential elector on the Republican ticket; in 1865 was a member of the State convention that amended the Constitution and provided for the reorganization of the State government; in March, 1865, he was elected judge of the 17th Judicial Circuit of Tennessee, and he held the office for four years; and then settled in Knoxville and resumed his law practice. Subsequently he held an office under the Southern Claims Commission. In 1868 he was a delegate to the National Republican Convention, and in 1872 he was presidential elector-at-large. In the latter year, also, he was elected to the Legislature, and was defeated for Speaker by a single vote. He was a presidential elector in 1876, and delegate-at-large to the National Republican Conventions of 1880, 1884, and 1888. In 1878, 1880, 1882, 1884, 1886, 1888, and 1890 he was elected to Congress from the 2d Tennessee District as a Republican, and in his last term he was a member of the committees on Elections, on Levees and Improvements of the Mississippi River, and on Militia. Judge Houk was the last survivor of a remarkable quartet of public men in Tennessee, Horace Maynard, William G. Brownlow, and Andrew Johnson having been associated with him in upholding the cause of the Union in that State at a time when loyalty called for the exercise of extreme prudence, and required the most unflinching moral and physical courage. He died from poison, accidentally self-administered.

Houseman, Julius, merchant, born in Leckendorf, Bavaria, Germany, Dec. 8, 1832; died in Grand Rapids, Mich., Feb. 8, 1891. He received a common-school and commercial education; removed to Grand Rapids, Mich., in 1851, and engaged in mercantile business and the manufacture of lumber. He was a city alderman in 1861-'70; member of the Legislature in 1871-'72; Mayor of Grand Rapids in 1873-'75; was defeated as Democratic candidate for Lieutenant-Governor of Michigan in 1876; and was member of Congress from the 5th Michigan District in 1883-'85. While in Congress he served on the Committee on Rivers and Harbors.

Hovey, Alvin Peterson, lawyer, born in Mt. Vernon, Ind., Sept. 6, 1821; died in Indianapolis, Ind., Nov. 23, 1891. He was apprenticed to the brick-maker's trade, and so improved his meager opportunities for study that when nineteen years old he began teaching, and when twenty-one was admitted to the bar. He was commissioned 1st lieutenant in the army for

service in Mexico in 1846; was a delegate to the State Constitutional Convention in 1850; judge of the 3d Judicial Circuit of Indiana in 1851-'54; appointed judge of the State Supreme Court in 1854; President of the Democratic State Convention in 1855; and United States District Attorney for Indiana in 1856-'58. In 1858 he was defeated for Congress; in August, 1861, was commissioned colonel 24th Indiana Volunteers; in April, 1862, was promoted brigadier-general; and in July, 1864, was brevetted major-general of volunteers. From 1865 till 1870 he was United States minister to Peru; in 1886 he was elected to Congress from the 1st Indiana District as a Republican, and he served on the Committee on Pacific Railroads; and he was elected Governor of Indiana in 1888.

Hubbard, Chester D., banker, born in Hamden, Conn., Nov. 25, 1814; died in Wheeling, W. Va., Aug. 23, 1891. He removed with his parents to Wheeling in 1819; was graduated at Wesleyan University, Middletown, Conn., in 1840; and became a banker and a heavy operator in iron and lumber. In 1852-'53 he was a member of the Virginia Legislature; and in 1861 was a delegate to the Virginia Convention in Richmond, where he opposed secession, and to the convention in Wheeling held soon afterward. Immediately after Virginia seceded he raised the first regiment of national volunteers south of the Ohio, enlisting ten full companies in Wheeling, and throughout the war he gave liberal aid to the national cause. In 1863-'64 he was a member of the Senate of the new State of West Virginia; in 1864 was a member of the National Republican Convention; and in 1865-'69 he was a member of Congress from the 1st West Virginia District, serving as a member of the committees on Manufactures and on Banking and Currency, and as chairman of the Committee on Expenditures in the Interior Department.

Hubbell, Algernon Sidney, lawyer, born in Lanesborough, Mass., Nov. 22, 1799; died in Newark, N. J., April 19, 1891. He was a son of Wolcott Hubbell, a Revolutionary soldier, State Senator of Massachusetts, and for many years judge of the County Court. The son studied law in Troy, N. Y.; was admitted to the bar in Massachusetts in 1824; was elected to the Legislature, and practiced in his native State till 1836. He then removed to Newark, N. J., where he was in active practice till within a few years of his death. Mr. Hubbell was a member of the New Jersey Legislature in 1847-'48; was one of the commissioners who prepared the amendments to the State Constitution in 1873; and served the city of Newark in various offices for several years.

Hutchins, Waldo, lawyer, born in Brooklyn, Conn., Sept. 30, 1822; died in New York city, Feb. 8, 1891. He was graduated at Amherst College in 1842, removed to New York city, studied law, and became a partner in the law firm of Schell, Slosson & Hutchins. In 1850 he was elected to the Legislature from King's County, being then a resident of Brooklyn, and also served as chairman of the Committee on the Judiciary. Three years afterward he made his permanent residence at King's Bridge. In 1855 he was appointed a member of the first park commission in New York city. In 1856 he declined the Democratic nomination for judge of the Supreme Court of the State; in 1867 was a delegate-at-large to the New York Constitutional Convention; and in 1879, 1880, and 1882 he was elected to Congress as a Democrat from the 12th (now 14th) New York District, the first election being to fill a vacancy. While in Congress he was a member of the committees on Expenditures in the Treasury Department, on Claims, on the Inter-oceanic Ship Canal (select), and on Appropriations, and was active in debates. In 1887 he was appointed a member of the present park commission, of which he was president in 1889-'90, and remained a commissioner till his death, giving in all fourteen years to the parks. Of all his law cases he took the most pride in his successful management of the Manhattan Savings Institution of New York city, after it

had been robbed of \$3,000,000 in securities in 1878. Through his efforts Congress, the State Legislature, and the city government authorized the issue of duplicates of the stolen bonds, and the institution and 17,000 depositors were protected.

Ingraham, Duncan Nathaniel, naval officer, born in Charleston, S. C., Dec. 6, 1802; died there Oct. 16, 1891. He was a son of Nathaniel Ingraham, who served with John Paul Jones in the action with the British brig "Serapia," and a nephew of Capt. Joseph Ingraham, who was lost at sea in the United States steamship "Pickering." He was appointed a midshipman in the United States navy when ten years old, was in active service in the war with England in 1812-'15, was promoted lieutenant in 1818, accompanied Com. David Porter on his expedition against the pirates in the Caribbean Sea, and became commander in 1828. After serving through the Mexican War he was sent in command of the "St. Louis" to join the American squadron in the Mediterranean, and dropped anchor in the harbor of Smyrna on June 22, 1853. The day previous Martin Koszta, a Hungarian and follower of Louis Kossuth in the revolution against Austria, who had lived two years in the United States and declared his intention of becoming a citizen, had been seized in Smyrna by a party of armed Greeks in the employ of the Austrian consul-general, and placed on board the Austrian man-of-war "Hussar." Commander Ingraham learned of the kidnapping directly after his arrival, and, visiting the "Hussar," satisfied himself of the truth of Koszta's declarations, and then formally demanded his release. While Commander Ingraham was awaiting official instructions from the United States *chargé d'affaires* in Constantinople, the Austrian man-of-war was re-enforced by six more war vessels, and when the "Hussar" attempted to leave the harbor with Koszta on board the American commander threatened to prevent departure by force and prepared his ship for action. On July 1 Ingraham received a commendatory reply from Constantinople, and at once made a demand for the surrender of Koszta by a specified hour, under penalty of extreme measures. After much parleying, it was agreed that the Austrian consul-general should deliver Koszta to the French consul to be held subject to legal determination of his case. The affair was made the subject of diplomatic correspondence between the United States and Austria, and was settled by Austria's acknowledging the rights of the United States in the premises and apologizing for the actions of her officials at Smyrna. Commander Ingraham received a gold medal and a letter of thanks from Congress, and numerous testimonials from private citizens. He was promoted captain in 1855, and appointed chief of the Bureau of Ordnance and Hydrography of the Navy Department in 1856. At the beginning of the civil war he resigned his commission, entered the Confederate naval service, and, as chief of the Bureau of Ordnance, Construction, and Repair, gained the rank of commodore.

Jay, John Clarkson, physician, born in New York city, Sept. 11, 1808; died in Rye, N. Y., Nov. 15, 1891. He was a son of Peter Augustus Jay and a grandson of John Jay, and was graduated at Columbia College in 1827 and at the College of Physicians and Surgeons in 1831. He practiced till his marriage, and then retired from business and professional pursuits to take charge of his estate at Rye. He was a founder of the Lyceum of Natural History (now the New York Academy of Sciences) and of the New York Yacht Club, and was a trustee of Columbia College from 1859 till 1880. Dr. Jay was best known for his work in connection with conchology. His costly library on the subject and his collection of shells, considered the most complete and valuable in the United States, were purchased by Catharine S. Wolfe and presented to the American Museum of Natural History as a memorial to her father. He examined, classified, and made an elaborate report on the shells gathered by Commodore Perry on his Japan expedition, and was author of "Catalogue of Recent Shells"

(1835) and "Description of New and Rare Shells" (1836), in which he enumerated 11,000 well-marked varieties and 7,000 well-established species.

Jerome, Leonard W., capitalist, born in Pompey Hill, Onondaga County, N. Y., in 1818; died in Brighton, England, March 3, 1891. He was educated at Princeton and at Union College, studied law in Albany, N. Y., and was admitted to the bar in 1840. Preferring journalism to law, with his brother, Lawrence R. Jerome, he established the Rochester "American," which was made a success as a strong Whig organ. After the inauguration of President Fillmore, Leonard Jerome was appointed United States consul at Trieste and Lawrence Jerome collector of the port of Rochester. On the election of Franklin Pierce to the presidency, the Jerome brothers retired from political life, sold their newspaper, and removed to New York city, where two other brothers had already established themselves. Leonard Jerome began operating in Wall Street, and about a year afterward formed a partnership with his brother Addison G. Jerome and the late William R. Travers. The firm soon became noted for its boldness in dealing in stocks and bonds of large railroad corporations, and made and lost a great deal of money. In one operation Mr. Jerome lost \$600,000, and in another \$800,000. During the civil war he gave liberally of his money to aid the national cause. He paid the whole expense of the first great Union meeting in the Academy of Music, was treasurer of the Union Defense Committee, and personally kept a large sum in its treasury; founded the Riot Relief fund for the benefit of the families of those killed and wounded in the draft riots of 1863; subscribed \$35,000 toward building a fast cruiser to pursue the "Alabama"; and took pleasure in heading popular subscription lists for patriotic and charitable purposes. Mr. Jerome was an enthusiast in turf and yachting affairs. He established the long popular racing track of Jerome Park at Fordham, N. Y., paid \$40,000 for the horse "Kentucky," and aided in organizing and was president of the New York and the Coney Island Jockey Clubs. In yachting he was the original owner of the "Undine," and part owner of the "Restless" and "Dauntless," and built the unsuccessful steam yacht "Clara Clarita."

Johnson, Ebenezer Alfred, educator, born in New Haven, Conn., Aug. 18, 1813; died in Yonkers, N. Y., July 18, 1891. He was graduated at Yale College in 1833; remained there for several years as a tutor, meanwhile studying law; was admitted to the bar, but decided not to practice; and in 1838 was appointed assistant Professor of Greek and Latin in the University of the City of New York. Two years afterward he was appointed Professor of Latin, and held the chair till his death. In early life Prof. Johnson published educational works, including editions of the orations of Cicero and Cornelius Nepos, but in later years he wrote little.

Jones, George, publisher, born in Poultney, Vt., Aug. 16, 1811; died in South Poland, Me., Aug. 12, 1891. He became errand boy and afterward clerk in the store of Amos Bliss, a country merchant, who also published "The Vermont Spectator." At that time Horace Greeley was a compositor on the paper, and a friendship was formed between the lads that ultimately led Mr. Jones to enter journalism. He removed to New York city in 1833, and was urged by Mr. Greeley to become a partner in his projected "Tribune," but declined the invitation, though he afterward accepted a subordinate place in the business office. When Mr. Jones retired from the "Tribune" office he went to Albany, N. Y., and engaged first in the news agency business and afterward in banking. In 1851 he sold out his banking business, returned to New York, and, in association with Henry J. Raymond and Edward D. Wesley, founded the New York "Times." Mr. Wesley retired from the partnership in 1860, and after the death of Mr. Raymond, in 1869, Mr. Jones became head of the firm and remained so till his death. The most memorable event in Mr. Jones's long and busy career was his warfare on the

Tweed ring, which resulted in the downfall of the ring and the conviction of its leaders.

Joy, Charles Arad, chemist, born in Ludlowville, Tompkins County, N. Y., Oct. 8, 1823; died in Stockbridge, Mass., May 29, 1891. He was graduated at Union College in 1844 and at the Cambridge Law School in 1847, and in the latter year was appointed on the United States Geological Survey of the Lake Superior region. Subsequently he studied chemistry in Berlin, Göttingen, and Paris. On his return he was appointed Professor of Chemistry in Union College, where he remained till 1857, when he was chosen to the similar chair in Columbia College, which he resigned in 1877. He was a member of the juries of the world's fairs at London, Paris, Vienna, and Philadelphia; was President of the Lyceum of Natural History (now the New York Academy of Sciences) in 1866; President of the American Photographic Society, chairman of the Polytechnic Association of the American Institute, foreign secretary of the American Geographical Society, and a member of many scientific bodies. He had edited "The Scientific American" and "The Journal of Applied Chemistry," and written the chemical articles in the "American Cyclopædia." Prof. Joy's special work was his investigation of the combination of alcohol radicles with selenium and of the compounds of glucinum.

Kelley, Benjamin Franklin, military officer, born in New Hampton, N. H., in 1807; died in Oakland, Md., July 16, 1891. In 1826 he settled in Wheeling, W. Va., where he was engaged in mercantile business till 1851, when he became freight agent of the Baltimore and Ohio Railroad. During his residence in Wheeling he took an active part in public affairs, and when State after State was adopting the ordinance of secession, he exerted a large interest in keeping the western part of Virginia loyal. On the first call for national volunteers he raised the 1st Virginia Regiment, and was commissioned its colonel on May 25, 1861. Two days afterward he marched toward Grafton, held by a Confederate force, which retreated to Philippi on his approach, and on June 3 attacked the enemy at the latter place, fighting one of the first battles in the civil war. In this engagement he was severely wounded, and was compelled to retire from his command for two months. During his convalescence he was promoted brigadier-general, and on returning to the field he was assigned by Gen. McClellan to the command of the railroad division. On Oct. 22, 1861, he fought a brilliant battle at Romney, for which he was complimented by President Lincoln and Gen. Scott. He was then assigned to the command of the Department of Harper's Ferry and Cumberland, but in January, 1862, he had to seek relief from active service on account of his wound. In the summer following he returned to his command. In July, 1863, he was given command of the Department of West Virginia. He pursued Gen. Lee after his passage of the Potomac, and in November destroyed the Confederate camp under Gen. Imboden, near Moorfield, Va. During the summer of 1864 he defeated the Confederates at Cumberland, New Creek, and Moorfield, for which he was brevetted major-general in 1865. After the close of the war he was appointed collector of internal revenue for the 1st West Virginia District; in 1876 he was made superintendent of the Hot Springs Reservation in Arkansas; and in 1883 he became an examiner of pensions. It has been claimed for him that in all his engagements with the Confederates he was never defeated.

Kendrick, Henry Lane, military officer, born in Lebanon, N. H., Jan. 20, 1811; died in New York city, May 24, 1891. He was graduated at the United States Military Academy and appointed brevet 2d lieutenant in the 2d United States Infantry, July 1, 1835; was promoted 2d lieutenant, April 1, 1836, and transferred to the 2d Artillery in June following; promoted 1st lieutenant, June 20, 1837; captain, June 18, 1846; appointed Professor of Chemistry in the United States Military Academy, March 3, 1857; appointed brigadier-general of volunteers, Sept. 23, 1861, but declined

to serve, and was retired with the brevet rank of major and the pay of a colonel, Dec. 13, 1880. He was Assistant Professor of Chemistry, Mineralogy, and Geology at the United States Military Academy in 1835-'47; was engaged in the siege of Vera Cruz, the battle of Cerro Gordo, and the defense of Puebla in the Mexican War; commanded the escorts of the topographical parties exploring the Indian country from Zuhí river, New Mexico, to San Diego, Cal., in 1851, and the country between the Republican Fork and Arkansas river in 1852; and was Professor of Chemistry, Mineralogy, and Geology at the Military Academy in 1857-'80.

Kenly, John Reese, lawyer, born in Baltimore, Md., in 1822; died there, Dec. 20, 1891. He received a private-school education, and was admitted to the bar in 1845. At the beginning of the Mexican War he raised a company of volunteers, and was elected captain. He took part in the advance of Gen. Taylor from Bravo del Norte to Monterey and in the battles that led to the fall of that city, and when Col. William H. Watson fell he rallied his battalion, and kept it in action till the close of the battle. After serving a year he returned to Baltimore, and almost immediately re-entered the service as major and went back to Mexico, where he remained till the close of the war. He then began practicing law, was an unsuccessful Whig candidate for the Legislature and Congress, and was voted the thanks of the State by the General Assembly for his gallantry in Mexico. On June 11, 1861, he was commissioned colonel 1st Maryland Regiment; in May, 1862, he aided in saving the national force under Gen. Banks at Front Royal by checking a Confederate advance, but was himself wounded and taken prisoner; and on Aug. 23 following he was promoted brigadier-general for this service. Later he was in command of all the troops in Baltimore outside the forts, and he further distinguished himself at Hagerstown and at Harper's Ferry. In 1863 he performed one of his most brilliant acts in leading the Maryland Brigade at the recapture of Maryland Heights. He served in the 1st and 8th Army Corps till the close of the war, and was rewarded with the brevet of major-general on March 13, 1865, the thanks of the General Assembly of Maryland, and a sword by the corporation of Baltimore. Gen. Kenly refused to apply for a pension, lost his home in 1890 because unable to pay taxes, and died poor. He published "Memoirs of a Maryland Volunteer in the Mexican War" (Philadelphia, 1873).

Kidder, Daniel Pariah, clergyman, born in Darien, N. Y., Oct. 18, 1815; died in Evanston, Ill., July, 29, 1891. He was graduated at Wesleyan University, Middletown, Conn., in 1836, entered the ministry of the Methodist Episcopal Church, was on missionary duty in Brazil in 1837-'40, and was the first man to deliver a Protestant sermon on the banks of the Amazon, and held pastorates in Paterson and Trenton, N. J., in 1840-'44. In 1844 he was appointed editor of the Sunday-school publications and tracts of the Methodist Book Concern, and he held the office till 1856, when he became Professor of Practical Theology in Garrett Biblical Institute, Evanston, Ill. In 1871 he resigned to accept a similar chair in Drew Theological Seminary, Madison, N. J., which he occupied till 1880. He was then elected secretary of the Methodist Episcopal Board of Education in New York city, where he remained till 1887. He had since lived in retirement at Evanston. He published "Mormonism and Mormons" (New York, 1841); "Sketches of Residence in Brazil" (2 vols., 1845); "The Christian Pastorale" (Cincinnati, 1871); "A Treatise on Homiletics" (New York, 1864); and "Helps to Prayer" (1874); a translation from the Portuguese of Feijó's "Necessity of abolishing a Constrained Clerical Celibacy" (New York, 1844); and, with the Rev. J. C. Fletcher, "Brazil and the Brazilians" (Philadelphia, 1857).

Kiddle, Henry, educator, born in Bath, England, in 1824; died in New York city, Sept. 25, 1891. He came to New York city when nine years old, began

teaching under the direction of the Public School Society when thirteen, and was the first principal of the first school established by that society, which was the predecessor of the present Board of Education, when seventeen. As the society established new schools he was placed in charge temporarily to direct their organization, and became assistant superintendent under Samuel Randall. While thus engaged in educational work he studied law with Samuel J. Tilden, and was admitted to the bar in 1848. In 1870 he succeeded Mr. Randall as superintendent of public schools, and resigned the office of principal of the Saturday Normal School, which he had held for several years. In 1879 he published "Spiritual Communications," a book that created considerable excitement and raised the question of Prof. Kiddle's further usefulness as superintendent, which he solved in 1880 by resigning. He then applied himself to the investigation of spiritualism, and wrote and lectured on the subject. He was associated with Prof. A. J. Schem in the compilation of the "Encyclopedia of Education" (New York, 1876), for which the University of France made him an officer of the Academy; and he published a "Dictionary of Education," a series of "Educational Year-books," and works on astronomy, grammar, and physics.

Kimball, Charles T., manufacturer, born in Bethel, Me., in 1826; died in New York city, March 19, 1891. He was brought up on a farm, bought his time from his father when eighteen years old, went to Bridgeton, Me., where he attended school and learned carriage-making, and in 1847 established a carriage factory of his own in Norway, Me. He was prosperous from the start, and built up one of the largest carriage factories in New England. Settling in Portland, he became active in public affairs, and held several municipal offices; was a war Democrat in 1861-'65, and was twice defeated for governor, although he polled a larger vote than any other Democratic candidate for that office had ever received in Maine. In 1876 he was appointed a Centennial commissioner from New York; subsequently he removed to Chicago and established the largest carriage factory in that city, and in 1885-'87 he was United States consul at Stuttgart.

King, Francis T., philanthropist, born in Baltimore, Md., Feb. 25, 1818; died there, Dec. 19, 1891. He was a member of the Orthodox Society of Friends, made a large fortune as a member of the firm of King, Carey & Howe, and for nearly twenty years had applied himself wholly to charitable work and to large administrative duties intrusted to him. He was President of the Board of Trustees of the Johns Hopkins Hospital, director of the Johns Hopkins University, executor of the estate of Thomas Wilson, the philanthropist, President of the Thomas Wilson Sanitarium, director of the Samuel Ready Orphan Asylum, President of the Maryland Bible Society, founder of the Central Savings Bank, President of the Board of Directors of Bryn Mawr College, and an official in many financial institutions. He gave liberally, but it is doubtful if any one knows the extent.

Kinlock, Robert Alexander, physician, born in Charleston, S. C., Feb. 20, 1826; died there, Dec. 23, 1891. He was graduated at the College of Charleston in 1845, and at the medical department of the University of Pennsylvania in 1848, and after spending two years in study in London, Edinburgh, and Paris, returned to Charleston and practiced there till his death. At the beginning of the civil war he entered the Confederate army as surgeon, and he remained in the field till the close of the war. He attended the wounded Confederates in the first Bull Run battle, was medical director on the staffs of Gens. Lee, Beauregard, and Pemberton, and inspector of hospitals in South Carolina, Georgia, and Florida; was captured near Wimsborough, S. C., while trying to reach the Confederate army in North Carolina, on Feb. 22, 1865, and was released soon afterward as a non-combatant. In 1867 he was elected Professor of Materia Medica and Therapeutics in South Carolina Medical College, soon afterward he was made Professor of Surgery

there; and subsequently he was chosen dean of the college, and he held the office till his death. Dr. Kinlock was the first surgeon of the Roper Hospital, attending surgeon of the City Hospital, and surgeon and gynecologist to the St. Xavier Infirmary. He was a member of many medical associations, was a delegate to the International Medical Congress in 1876, was elected Vice-President of the American Medical Association in 1883, and was a visitor to the Berlin Medical Conference in 1890. He is said to have been the first surgeon in the United States to make a resection of the knee joint for chronic disease, and the first to treat fractures of the lower jaw and other bones by wiring the fragments. He was also credited with being the first surgeon that ever performed laparotomy for gunshot wound of the abdomen without a protrusion of the viscera. Dr. Kinlock wrote surgical treatises and invented instruments that are now in general use.

Knight, Cyrus Frederick, clergyman, born in Boston, Mass., March 28, 1831; died in Milwaukee, Wis., June 8, 1891. He was educated at Burlington College and Harvard University, and was graduated at the General Theological Seminary in New York city in 1854. In the same year he was ordained deacon, and in 1856 took priest's orders. From 1857 to 1867 he was rector of St. Mark's Church, Boston, and from 1867 to 1877 ministered to St. James's Church, Hartford, Conn. In the latter year he removed to Lancaster, Pa., to become rector of St. James's Church there, which place he filled until he was consecrated Bishop of Milwaukee on March 26, 1889. The short period of his episcopate was one of constant activity on the part of Bishop Knight, his labors continuing up to the time of his last brief illness. His only published works are occasional sermons and "Charges in the Communion Office" (1886).

Koppnagel, Clement, clergyman, born in Westphalia, Germany, in 1839; died in Harrisburg, Pa., Nov. 27, 1891. He was ordained a priest in the Roman Catholic Church in 1865, and went to Harrisburg and organized the first German Catholic congregation in that section. He designed the present church building, the largest in the city, and built it mainly with his own hands, spending twelve years in the work, and attending to his growing congregation meanwhile. He carved or made and set the main altar, pulpit, oratorium, communion railing, St. Joseph's and the blessed Virgin's side altars, the baptismal font, the confessional box, and the fourteen stations of the cross. The stained-glass windows are the largest in the city, and one of them, designed, cut, and made by him, contains 228 pieces of glass, and represents the Virgin Mary. The church is an object of great interest in Harrisburg, and its pastor was widely known for his diversified gifts.

Lamport, William Henry, legislator, born in Pitts-town, N. Y., May 27, 1811; died in Canandaigua, N. Y., July 21, 1891. He received a district-school education, and became a farmer. In 1848-'49 he was supervisor of Gorham, N. Y.; in 1851 was elected sheriff of Ontario County; in 1854 a member of the State Assembly; in 1866-'67 trustee and president of the village of Canandaigua; and in 1870-'72 member of Congress from the 26th New York District, as a Republican. While in Congress he served on the committees on Agriculture and on Expenditures in the War Department.

Latrobe, John Hazlehurst Boneval, lawyer, born in Philadelphia, Pa., May 4, 1803; died in Baltimore, Md., Sept. 11, 1891. He was a son of Benjamin H. Latrobe, the architect who designed the National Capitol at Washington, the Roman Catholic Cathedral at Baltimore, and the Bank of Philadelphia. He received a collegiate education; took part of the course at the United States Military Academy, resigning in 1820 on account of the death of his father; and was admitted to the bar in Baltimore in 1825. In 1828 he was engaged by the Baltimore and Ohio Railroad Company to secure the right of way for the road from Point of Rocks to Williamsport, and he re-

mained with the company as its counsel till his death. He was the sole survivor of the party that accompanied Peter Cooper on the trip with the first locomotive used in the United States, which undertook to run between Ellicott's Mills and Baltimore in competition with the English "Gray Mare" in 1830.

When Samuel F. B. Morse was making his early experiments with his system of magnetic telegraphy Mr. Latrobe was the first man in a place of influence to recognize the utility of the scheme, and from 1837 till the opening of the first telegraph line, between Baltimore and Washington, on May 24, 1844, he gave Prof. Morse substantial aid and encouragement. After Ross Winans had secured a contract from the Russian Government for the construction and equipment of a railroad from St. Petersburg to Moscow for \$3,000,000, Mr. Latrobe accompanied Mr. Winans's sons Thomas De Kay and William Lewis to Russia to begin the work, about 1842. In 1858, when the Winanses were unable to secure from the Russian Government a full settlement for their railroad work, they sent Mr. Latrobe to St. Petersburg as their attorney, and on his collection of the amount due they paid him the large fee, for those days, of \$60,000. About 1824 Mr. Latrobe became deeply interested in the movement to colonize the colored people of the United States in Africa. Subsequently he was elected President of the Maryland Colonization Society, and on the death of Henry Clay succeeded him as president of the national society. In connection with this work he became a founder of the Republic of Liberia, and prepared the first map of the region. He also induced the Maryland society to establish a Maryland colony at Cape Palmas, for which the State appropriated \$275,000. A form of government for the colony was prepared by him; and, after an independent, successful existence of more than twenty years, the colony was merged with the Liberian republic. Mr. Latrobe was the oldest student of the United States Military Academy, the oldest lawyer in Maryland, and the oldest railroad official in the country, and had been President of the Board of Visitors to the United States Military Academy, president of the American branch of the Association for the Exploration of Africa, and President of the Maryland Historical Society. With all his activity in legal, railroad, and public affairs, he found time to gratify a natural taste for invention, and to his genius is due the existence of the popular "Baltimore heater." To the city of Baltimore he gave largely of his time and thought. He was the originator of its admirable park system, and was a founder or director of its leading financial and charitable institutions. He was also an accomplished artist and a voluminous writer. Besides a series of juvenile books (1826), four novelettes, and an address in Washington on "The Capitol and Washington at the Beginning of the Present Century" (Baltimore, 1881), he published "Biography of Charles Carroll, of Carrollton" (Philadelphia, 1824); "Justices' Practice" (Baltimore, 1825; seventh edition, 1880); "Scott's Infantry and Rifle Tactics" condensed (1828); "Picture of Baltimore" (1832); "History of Mason and Dixon's Line" (Philadelphia, 1854); "Personal Recollections of the Baltimore and Ohio Railroad" (Baltimore, 1858); "Hints for Six Months in Europe" (Philadelphia, 1869); "Odds and Ends," a volume of poems (printed privately, Baltimore, 1876); "History of Maryland in Liberia" (Baltimore, 1885); and "Reminiscences of West Point in 1813 to 1822" (1887).

Lazarus, Jacob H., artist, born in New York city in 1825; died there, Jan. 11, 1891. He studied painting in his native city, principally with William Inman.



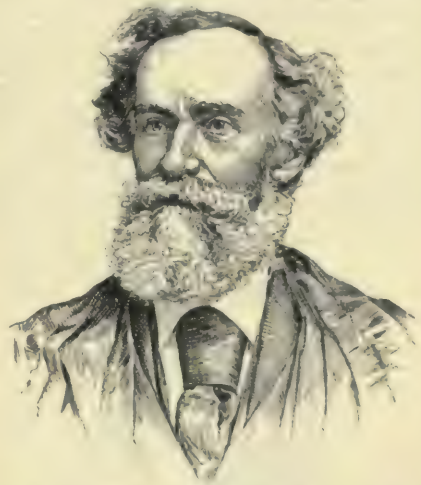
became a portrait painter of high merit, and was much esteemed as a restorer of old paintings and as an expert on the character and value of paintings in general. Among his patrons in portraiture were three generations of the Astor family, the Belmonts, Dr. Fordyce Barker, Gould Redmond, and many well-known citizens of New York, Boston, Brooklyn, and Philadelphia. He was for many years a member of the National Academy of Design.

Lea, Albert, civil engineer, born in Tennessee, in July, 1808; died in Corsicana, Tex., Jan. 17, 1891. He was graduated at the United States Military Academy in 1831, was assigned to duty at Fort Gibson, then on the extreme Western frontier, and was placed in command of a military surveying expedition to the region of Minnesota river in 1835. Soon after completing and reporting on the expedition, he resigned from the army and engaged in civil engineering. In 1841 he was appointed chief clerk in the War Department at Washington, and for a time during President Fillmore's administration he was acting Secretary of War. Subsequently he became Professor of Mathematics in the University of East Tennessee, and after seven years' service went to Texas in the interest of several railroad enterprises. During the civil war he served on the staff of Gen. Magruder, of the Confederate army, as chief of engineers. A railroad route and the town of Albert Lea, in Minnesota, were named for him. He had resided in Texas for more than thirty years, mainly in Galveston.

Learned, Amos E., journalist, born in Boston, Mass., in 1829; died in Poughkeepsie, N. Y., March 8, 1891. He was apprenticed to the printer's trade when a boy, in the office of the Boston "Transcript," and after working on the "Boston Shipping List," the "Chronotype," and the "Boston Atlas," became agent of the New England Press Association in New York in 1859. He held this office till 1882, when he resigned to take an editorial place on the New York "Mail and Express," with which he was connected for six years. He afterward engaged unsuccessfully in manufacturing. During his long service as press agent he became intimate with the principal public men of the country. He was an ardent admirer of Gen. Grant, and as a delegate to the National Republican Convention at Chicago in 1880 was one of the band of 306 who voted steadily to give the ex-President a third nomination. President Arthur appointed him United States consul at Melbourne, Australia, but he declined the office.

Le Conte, John, physicist, born in Liberty County, Ga., Dec. 4, 1818; died in Berkeley, Cal., April 29, 1891. He was the second son of Louis Le Conte, who followed the sciences with the ability of a scholar and the love of an enthusiast, undertaking an investigation for the pleasure it gave him, and freely giving the results to those who asked for them. His uncle, Major John E. Le Conte, of the United States Engineers, was an ardent botanist and a frequent visitor to the plantation home of Woodmanston. Under these influences young Le Conte grew to boyhood, and then passed to the care of Alexander H. Stephens, who prepared him for Franklin College, now the University of Georgia, where he was graduated in 1838. Choosing medicine as his profession, he was graduated at the College of Physicians and Surgeons, in New York, in 1841. He settled in Savannah, Ga., in 1842, and there began the practice of his profession, but in 1846 abandoned medicine to accept the chair of Natural Philosophy and Chemistry in Franklin College. This post he held until 1855, when he resigned to become lecturer on chemistry in the College of Physicians and Surgeons, in New York, but in 1856 accepted the chair of Natural and Mechanical Philosophy created for him at the South Carolina College, in Columbia. He continued in this place until the college was disbanded by the civil war, when he took charge of the Niter and Mining Bureau of South Carolina, but resumed his professorship in 1866, when the University of South Carolina was reorganized. In 1889 he was called to the chair of

Physics, Industrial Mechanics, and Physiology in the University of California, then recently created. He became its acting president, and drew up the first prospectus of the university. Subsequent to the arrival of President Daniel C. Gilman he returned to the charge of his chair, but again, when President Gilman was called to the Johns Hopkins University, Prof. Le Conte became, first, acting president, and then, from 1876 till 1881, president of the university, continuing in the mean while to discharge the duties of his chair, to which he retired in 1881 and continued to hold until his death. His scientific work extended over fifty years, and at first was in the line of medical investigation, but subsequently became confined almost exclusively to physical science. Mechanics, heat, sound, light, and electricity were among the subjects studied by him, but his first choice was sound, and to that department in 1857 he contributed his discovery of the sensitiveness of flame to musical vibrations, which has served as the starting-point in the exquisite applications that have since been worked out by the use of flame for the detection of sounds too delicate for the ear to perceive, and for the optical analysis of compound tones. His original papers were more than one hundred in number, and were published in scientific journals both in this country and abroad, also in the "Proceedings of the American Association for the Advancement of Science," to which organization he served as general secretary in 1857. During the same year he delivered a course of lectures on the "Physics of Meteorology" at the Smithsonian Institution in Washington, D. C., and in 1867 one of four lectures on the "Stellar Universe" at the Peabody Institute, in Baltimore, Md.



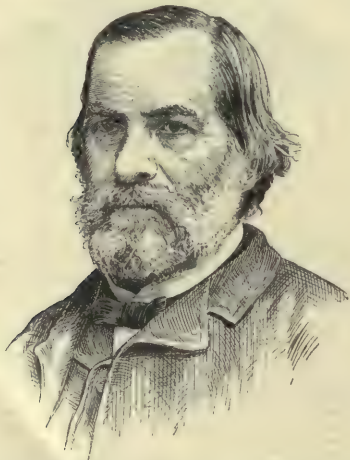
The degree of LL. D. was conferred on him by the University of Georgia in 1879, and in 1878 he was elected to the National Academy of Sciences. He was a member of the American Philosophical Society and a corresponding member of the Philadelphia and New York Academies of Science. A treatise on "General Physics," nearly completed by him, was destroyed in the burning of Columbia, S. C., in 1865.

Lee, William Henry Fitzhugh, military officer, born in Arlington, Va., May 31, 1837; died in Ravensworth, Va., Oct. 15, 1891. He was the second son of Gen. Robert E. Lee, was graduated at Harvard in 1857, and in the same year was appointed a 2d lieutenant in the 6th United States Infantry, and accompanied Col. Albert Sidney Johnston's military expedition to Utah. In 1859 he resigned his commission and applied himself to the care of his White House estate on Pamunkey river. At the beginning of the civil war he raised a company of cavalry for the Confeder-

ate army, and during the war served successively in every grade from captain to major-general. In June, 1863, he was wounded at Brandy Station; later in the year he was captured in Hanover County, Va., and was confined as a hostage nearly a year in Fort Monroe and in Fort Lafayette, New York harbor; in 1864 was exchanged; and he afterward commanded a division till the final surrender at Appomattox. He resided on his plantation from 1865 till 1874, when he removed to Burke's Station. In 1875 he was elected to the State Senate, and in 1886, 1888, and 1890 was elected to Congress from the 8th Virginia District as a Democrat. He served as a member of the committees on the District of Columbia, on Expenditures in the State Department, on Accounts, and on Real-Estate Purchases by District Commissioners.

Lee, William Raymond, military officer, born in Marblehead, Mass., Aug. 15, 1807; died in Roxbury, Mass., Dec. 26, 1891. He was a grandson of Col. William Raymond Lee, of the Revolutionary army, and was educated at the United States Military Academy in the class of 1829, but was obliged to leave before graduation. Subsequently he became a civil engineer and Superintendent of the Boston and Providence Railroad. At the beginning of the civil war he tendered his services to Gov. Andrew, who appointed him colonel of the 20th Regiment of Massachusetts Volunteers. On Oct. 21, 1861, he was taken prisoner during the battle of Ball's Bluff, and for several months he was confined in Richmond as a hostage for Confederate privateersmen who had been captured by the national forces. After the Federal Government had agreed to treat the privateersmen as ordinary prisoners of war, Col. Lee was exchanged, and soon rejoined his regiment. He commanded it in the principal battles fought by the Army of the Potomac till that of Fredericksburg, distinguished himself at Fair Oaks, and at Glendale commanded three regiments, and was severely injured by a horse falling on him. After he had served through the Antietam campaign his injuries forced him to resign, and he retired with the brevet rank of brigadier-general, for gallantry at Antietam and during the war.

Leidy, Joseph, naturalist, born in Philadelphia, Pa., Sept. 9, 1823; died there, April 30, 1891. His ancestors were of German descent, and he was destined by his parents to be an artist, but an early fondness for botany and mineralogy led to his passing his leisure



in a wholesale drug store, where he further acquired a knowledge of pharmacy and chemistry, to which he added comparative anatomy. With this foundation he began in 1840 the study of medicine under Dr. Paul B. Goddard, and was graduated from the medical department of the University of Pennsylvania in

1844. Immediately he became assistant to Robert Hare and James B. Rogers in the chemical laboratories of the university, and also began the practice of medicine. The latter he discontinued in 1846 in order to devote himself exclusively to teaching. Meanwhile, in 1845, he became prospector to the chair of Anatomy in the University of Pennsylvania, then held by Dr. William E. Homer, and in 1846 was elected demonstrator of anatomy in the Franklin Medical College, but this he relinquished after a single term in order to return to Dr. Homer, with whom he gave a private course of anatomical lectures in 1847; also in 1848 he visited Europe with Dr. Homer, examining the museums and hospitals there. In 1849 he began a course of lectures on physiology at the Medical Institute, but failing health compelled him to give these up, and in 1850 he again visited Europe in order to aid Dr. George B. Wood in forming the collection of specimens and models used in the department of *materia medica*. Owing to Dr. Homer's illness in 1852, he was called to deliver the lectures in that department, and in 1853, on the death of his associate, he was elected to the full possession of the chair of Anatomy, which post, together with that of honorary dean of the medical faculty, he held until his death. During the civil war he entered the United States Volunteer Service and was contract surgeon in the Satterlee General Hospital in Philadelphia, Pa. His special duty was to report on the more important post-mortem examinations, and several of his reports with his own drawings were published in the "Medical and Surgical History of the Rebellion." In 1871 he was chosen Professor of Natural History to Swarthmore College, and in 1884, on the establishment of the department of biology and the auxiliary department of medicine in the University of Pennsylvania, he was made its director. He also held the chair of Zoology and Comparative Anatomy in the faculty of the college department in the University. Prof. Leidy was an accomplished draughtsman; and in 1844, when Dr. Amos Binney began the publication of his great work on the "Terrestrial Air-breathing Mollusks of the United States," he selected Prof. Leidy to dissect and draw the internal organs of the species that were to be described. The result was the production of 16 plates giving the anatomy of 38 species of native mollusks and the chapter entitled "Special Anatomy of the Terrestrial Mollusks of the United States." In 1847 he published his first paleontological paper, "On the Fossil Horse of America," in which he clearly established the existence of a species, for which he proposed the name of "*Equus americanus*." This subject, with later discoveries in the hands of Thomas H. Huxley and Othniel C. Marsh, has been largely used as a demonstration of the theory of evolution. His work in this direction included the determination of the former existence of a tropical climate on the Western slope in which lived varieties of lion, tiger, camel, rhinoceros, and other forms of animals having no living representatives in the United States. Many of the earlier specimens obtained on the various surveys under the United States Government were submitted to him for study and report. His earlier work in paleontology had to do with the larger forms, but in recent years he devoted himself to the lower orders. Prof. Leidy received the Walker prize of \$1,000 from the Boston Society of Natural History in 1880, and the Lyell medal with the sum of £25 from the Geological Society of London "in recognition of his valuable contributions to paleontology" in 1884, and the degree of LL.D. was conferred upon him by Harvard in 1886. He was elected to the Academy of Natural Sciences of Philadelphia in 1845, and from 1846 till his death held the office of chairman of curators and that of president, subsequent to 1882. In 1849 he was elected to the American Philosophical Society, and was an associate fellow of the American Academy of Arts and Sciences. He was chosen to the National Academy of Sciences in 1864, and was a member of other scientific societies in this country and abroad. The titles of his

published papers exceed 800 in number, and were all on biological subjects. Among them are "Memoir on the Extinct Species of the American OX" (1852); "A Flora and Fauna within Living Animals" (1853); "Ancient Fauna of Nebraska" (1855); "On the Extinct Sloth Tribe of North America" (1855); "The Cretaceous Reptiles of the United States" (1855); "The Extinct Mammalian Fauna of Dakota and Nebraska" (1859); "Contributions to the Extinct Vertebrate Fauna of the Western Territories" (1873); "Description of Vertebrate Remains from the Phosphate Beds of South Carolina" (1877); "Fresh-water Rhizopods of North America" (1879); "The Parasites of the Termites" (1881); "On Manayunkia Speciosa" (1883); and "Tapo-worms in Birds" (1887). The foregoing were all issued by the Academy of Natural Sciences, the Smithsonian Institution, and under the auspices of the National Government as special monographs. He edited an edition of Sharpley and Quain's "Anatomy," and wrote "An Elementary Text-book on Human Anatomy" (Philadelphia, 1861; new edition 18). In his memory a fund of \$50,000 is being collected in order to establish a Leidy Memorial Museum as an independent part of the museum now forming at the University of Pennsylvania.

Leonard, William Henry, jurist, born in Amenia, Dutchess County, N. Y., June 11, 1812; died in Bedford, Westchester County, N. Y., May 30, 1891. In early life he went to Hudson, N. Y., where he studied law and was admitted to the bar, and was afterward a partner of John T. Hoffman, Gilbert M. Spier, Samuel M. Woodruff, and Chief-Justice Charles H. Van Brunt. On May 12, 1872, he was appointed a justice of the Supreme Court of New York, to fill a vacancy. Besides his service on this bench, he was a member of the Commission of Appeals, which had charge of the organization and prepared the calendar for the newly established Court of Appeals. For ten years he lived in retirement.

Lippitt, Henry, manufacturer, born in Providence, R. I., Oct. 9, 1818; died there, June 5, 1891. He received an academical education, became a clerk in a cotton-brokerage office in Providence in 1835, and afterward was a partner in several large manufacturing firms, including Walcott & Lippitt, Amory, Chapin & Co., and the Quinebaug Manufacturing Company, and in the Coddington, Social, and Harrison Cotton Mills. In 1858 he gave up the commission part of his business to confine himself to his manufacturing interests. He was a president or director of many financial and public institutions. In 1840 he aided in organizing the Providence Marine Corps of Artillery, and in 1842 commanded it during the Dorr "rebellion," protecting the State arsenal and first entering the Dorr fort at the capture of Acotes Hill. He was elected Governor of Rhode Island in 1875 and 1876 as a Republican.

Littlefield, Daniel M., manufacturer, born in North, Kingstown, R. I., Nov. 23, 1822; died in Pawtucket, R. I., May 31, 1891. He removed to Florence, Mass., and became interested in a new cotton mill in 1846 was chosen President of the Florence Sewing Machine Company in 1856, and went to Pawtucket and engaged in the manufacture of hair-cloth in 1868. In 1861-'62 he was elected to the Legislature of Massachusetts from the Northampton district; in 1878 he was an honorary commissioner from Rhode Island to the Paris Exposition, where he was appointed an American juror on fine machinery and mechanism; and in 1889 he was elected Lieutenant-Governor of Rhode Island, as a Republican.

Long, Armistead Lindsay, military officer, born in Campbell County, Va., Sept. 3, 1827; died in Charlottesville, Va., April 29, 1891. He was graduated at the United States Military Academy, and appointed a brevet 2d lieutenant of artillery in 1850; was first assigned to garrison duty at Fort Moultrie; was on frontier duty in New Mexico in 1852-'54; promoted 1st lieutenant in 1854; on garrison duty at Fort McHenry, Md., Barrancas Barracks, Fla., and Fort Wichita, Indian Territory, in 1854-'57, and in Kansas in

1857-'60. Early in 1861 he was appointed on the staff of Gen. Sumner, his father-in-law, in Washington; but on June 10 he resigned his commission. In July following he entered the Confederate service as major of artillery, and in 1862 he was promoted colonel, and appointed military secretary to Gen. Robert E. Lee. He participated in all the movements of the army under Gen. Lee, reaching the rank of brigadier-general in 1863. After the war he was engaged for three years in civil engineering, and subsequently in farming. He published "Memoirs of Gen. Robert E. Lee."

Loring, George Bailey, agriculturist, born in North Andover, Mass., Nov. 8, 1817; died in Salem, Mass., Sept. 14, 1891. He was graduated at Harvard College in 1838, and at its medical school in 1842; was surgeon of the 7th Regiment of State Militia in 1842-'44, and of the Chelsea Marine Hospital in 1843-'50; and was appointed United States commissioner to revise the United States marine-hospital system in 1849; and was postmaster of Salem in 1853-'57. While employed with these duties he began a practical and scientific study of agriculture, established an experimental farm of 450 acres about equidistant from Salem, Marblehead, and Swampscott, and became widely known as a lecturer and authority on agricultural subjects. In 1866-'67 he was a member of the State House of Representatives, and in 1873-'76 was President of the State Senate. Early in life he was a Democrat in politics, and he attended the national convention in Baltimore in 1856; but he joined the Republican party in 1864, and acted with it till his death. He was a delegate to the National Republican Conventions of 1868, 1872, and 1876; was appointed Centennial commissioner from Massachusetts in 1872; and was elected to Congress from the 6th Massachusetts District in 1876, and re-elected in 1878. In 1881 President Garfield appointed him United States Commissioner of Agriculture, and he held the office till 1885. In 1889 President Harrison appointed him United States minister to Portugal, which office he resigned in 1890. Besides numerous addresses, he published "The Relations of Agriculture to the State in Time of War" (1862); "Classical Culture" (1866); "Eulogy on Louis Agassiz" (1873); "The Farmyard Club of Jotham" (1876); "The Cobden Club and the American Farmer" (1880); an "Address to the Atlanta Cotton Convention" (1881); and "A Year in Portugal, 1889-'90" (1891).

Lossing, Benson John, engraver and author, born in Beekman, Dutchess County, N. Y., Feb. 12, 1813; died near Dover Plains, in the same county, June 3, 1891. He was the son of a farmer, and was apprenticed to a watch-maker in Poughkeepsie, with whom, on the completion of his apprenticeship, he went into partnership. A little later he became one of the proprietors and editors of the Poughkeepsie "Telegraph." In 1836 they began the publication of a literary periodical called "The Casket." Mr. Lossing then learned the art of wood-engraving in New York, and in 1838-'40 was editor and illustrator of the "Family Magazine." Meanwhile he severed his business connections in Poughkeepsie and established himself as a professional engraver in New York. In 1848 he began work on his "Pictorial Field-book of the Revolution" (2 vols., 1850-'52), to make which he traveled all over that part of our country in which the War of Independence was fought, writing the history of the movements and engagements, and making accurate sketches of every object that remained at the scenes of strife, every battle-field, every famous document, and many relics preserved either in a museum or in a private house. All the sketches he engraved on wood with his own hand. This was his greatest service to the country; by it he preserved the likeness of many things that have already perished. Some years later he prepared in a similar way a "Pictorial Field-book of the War of 1812" (1869). For many years he contributed illustrated articles to "Harper's Magazine," and for the London "Art Journal" he prepared a series of articles descriptive

of the scenery, history, and legends of the Hudson river, which were published, with illustrations from his sketches, in that monthly in 1860-'61, and afterward in a volume entitled "The Hudson, from the Wilderness to the Sea" (1866). From the papers, letters, and orderly books of Gen. Philip Schuyler he prepared "The Life and Times of Philip Schuyler" (2 vols., 1860; new ed., 1880). Early in 1862 he began the compilation of a "Pictorial Field-book of the Civil War in the United States," which was issued in three illustrated volumes. In 1872-'75 he edited the "American Historical Record and Repository of Notes and Queries," published in Philadelphia. Mr. Lossing gathered a large and valuable library, and constructed a fire-proof building for it on his place at Dover Plains. He was for many years a member of the board of trustees of Vassar College. Besides the works mentioned above, he published an "Outline History of the Fine Arts" (1841); "Lives of the Presidents of the United States" (1847); "Seventeen Hundred and Seventy-six, or the War for Independence" (1847); "Life of Gen. Zachary Taylor" (1847); "Life of Gen. Winfield Scott" (1847); "The New World" (1847); "Lives of the Signers of the Declaration of Independence" (1848); an illustrated "History of the United States for Schools" (1854), which was followed by the other volumes of a graded series; "Biographies of Eminent Americans" (1855); "Mount Vernon and its Associations" (1859); "Life of Washington," illustrated (1860); "Vassar College and its Founder" (1867); "Pictorial Description of Ohio" (1869); an illustrated "Memoir of Dr. Alexander Anderson," the first engraver on wood in America, published by the New York Historical Society (1870); a "History of England" for schools (1871); a large history of the United States entitled "Our Country," with 500 illustrations by Felix O. C. Darley (3 vols., 1873); an illustrated work on the progress of industries in the United States between 1776 and 1876, entitled "The American Centenary" (1876); "Story of the United States Navy for Boys" (1880); "Cyclopædia of United States History," with 1,000 illustrations (1881); "Biography of James A. Garfield" (1881); an illustrated "History of New York City" (1884); "Mary and Martha Washington" (1886); "Two Spies: Nathan Hale and John André" (1886); and "The Empire State, a Compendious History of the Commonwealth of New York" (1887). Mr. Lossing annotated Francis Hopkinson's "Pretty Story," with a biography of the author of the allegory, which was published under the title of "The Old Farm and the New Farm" (1857). With Edwin Williams he compiled "The Statesman's Manual" (4 vols., 1858) and the "National History of the United States" (2 vols., 1858). He also edited and annotated the "Diaries of Washington" (1859), and the "Recollections and Private Memoirs of Washington," by George W. P. Custis (1860), edited the "Poems" of William Wilson, with a biography (1869), and prepared an edition of John Trumbull's "McFingal," with a life (1871).

Loughlin, John, first bishop of the Roman Catholic diocese of Brooklyn, N. Y., born in County Down, Ireland, Dec. 20, 1817; died in Brooklyn, Dec. 29, 1891. His father was a tenant farmer, who emigrated to Albany, N. Y., where the young man received his early education. He completed his classical course in a school at Chambly, near Montreal, and then went to Mount St. Mary's College, Emmetsburg, Md. On Oct. 18, 1840, he was ordained a priest for the diocese of New York. He was first sent as a missionary to Utica, where he remained two years, until the death of Bishop Dubois of New York, when Archbishop Hughes, who had been the coadjutor of Bishop Dubois, made him assistant at the cathedral. Subsequently he was promoted to pastor, and in 1849 was appointed vicar-general. Archbishop Hughes in 1852 selected Father Loughlin as his theologian to accompany him to the first plenary council, held in Baltimore. That council recommended the erection of new dioceses, including Brooklyn, and Father

Loughlin was named as bishop, and was consecrated Oct. 30, 1853, in the New York cathedral, Mgr. Cajetan Bedini, the papal nuncio, officiating. Bishop Loughlin chose as his cathedral St. James Church, on Jay Street, the oldest Catholic church in Brooklyn, and took up his residence in the present parochial house, where he lived for thirty-seven years. When he came to Brooklyn there were only 10 Catholic churches on Long Island; at his death there were 119, 70 being within the city limits. Thus he earned the title of "Church Builder." He also invited to Brooklyn several religious and charitable associations, whose advent was followed by the establishment of hospitals, homes, orphanages, convents, academies, and colleges, all directed to the education and elevation of the Catholic masses. He was a shrewd business man, and had the faculty of picking out the most valuable sites for religious institutions and purchasing the ground long in advance of the necessity for its use. In 1860 he conceived the project of building a new cathedral. A site was purchased for \$75,200, but the civil war delayed work, and it was not until 1868 that the foundation was begun, the corner-stone being laid on June 21 of that year. Bishop Loughlin made his first visit to Rome in 1869 to attend the Council of the Vatican, and was made domestic prelate to the Pope. After his return part of the new cathedral was finished and named St. John's Chapel. In 1880 he made a second journey to Rome. He was invited to attend Pope Leo's golden jubilee, but instead of going sent one of the priests of his diocese with a present consisting of an album containing photographs of all the Catholic churches and institutions in the diocese, with a detailed statement of the progress of the Church on Long Island. Adjoining the new cathedral a costly episcopal residence was erected in 1888, but it was not until May, 1890, that the bishop could be persuaded to leave his humble home in Jay Street. His golden jubilee occurred in October, 1890, the celebration lasting four days and including a public reception at the Rink and a civic parade. On this occasion he was presented with a purse of \$37,000, which he devoted to the endowment of a seminary for the education of priests. He was averse to introducing any disturbing questions in his diocese, and never interfered with the expressions by his clergy of their views on political or ethical subjects. Some of his friends in the hierarchy who disagreed with this policy suggested the appointment of a coadjutor, but Bishop Loughlin sent word to Rome that he was perfectly able to attend to all his duties. He was not an orator, but was never uninteresting in speech, and was humble-minded in spirit, shunning publicity as if it were a plague. On New Year's day, 1892, his body was transferred to the cathedral in Jay Street, and the next day was placed in a vault beneath, there to remain until the completion of the new cathedral.

Love, James M., jurist, born in Fairfax Court-house, Va., March 4, 1820; died in Keokuk, Iowa, July 3, 1891. He received a common-school education, studied law in Janesville, Ohio, was admitted to the bar in 1840, and practiced in Coshocton County till 1846. He then raised a military company for service in Mexico, and commanded it till the close of the war. In 1850 he removed to Keokuk and resumed law practice. In 1852 he served a term as State Senator. Four years later he was appointed judge of the United States District Court of Iowa, and he held the office till 1882, when the State was divided into two districts, and he was assigned to the southern. He was a Democrat in politics. It is said that in all his judicial career of more than thirty-four years but two of his decisions were reversed by the United States Supreme Court.

Lowell, Robert Traill Spence, clergyman, born in Boston, Mass., Oct. 8, 1816; died in Schenectady, N. Y., Sept. 12, 1891. His father, the Rev. Charles Lowell, was a Unitarian clergyman, and Hon. James Russell Lowell was his younger brother. He was graduated at Harvard in 1833, and studied at the Harvard Med-

ical School. In 1839 he prepared for orders under Dr. Alonzo Potter, and was invited to Bermuda by Bishop Spencer of Newfoundland. He was ordained deacon in 1842 and priest in 1843, and from 1843 to 1847 was in charge of the parish of Bay Roberts in Newfoundland. He returned to the United States in 1847, and founded Christ Church parish in Newark, N. J. From 1859 to 1869 he was rector of Christ Church, Duanesburg, N. Y., and from 1869 to 1873 was head master of St. Mark's School at Southborough, Mass. In 1873 he was appointed to the chair of Latin Language and Literature in Union College, Schenectady, which he filled for six years. He wrote much for magazines and literary journals, and was author of "The New Priest in Conception Bay" (Boston, 1858; revised edition, 1889); "Fresh Hearts that failed Three Thousand Years Ago, and Other Poems" (1860); "Antony Brade, a Story of School-boy Life" (1874); "Burgoyne's March," a poem (1877); and "A Story or Two from an Old Dutch Town" (1878). His work, both in verse and prose, evinces much individuality and the presence of very decided literary gifts as regards vigor of conception and delicacy of expression. His health, which for some time had been feeble, was not strong enough to withstand the shock of recent family bereavements, and his death followed that of his distinguished brother within but a month's interval.

Ludington, Harrison, merchant, born in Kent, Putnam County, N. Y., July 30, 1812; died in Milwaukee, Wis., June 17, 1891. He received a common-school education, began business life as a clerk, went to Milwaukee and opened a general store in 1838, and with his brothers James and Nelson engaged in the lumber business in 1842. Subsequently he withdrew from the firm and formed a partnership with D. Wells, Jr., and A. G. Van Schaick, of Chicago. The new firm bought several saw mills on Green Bay, and Mr. Ludington retained his interests in the lumber business till his death, and was active in it till within a few years. He took much pride in the development of Milwaukee, bought the first bag of wheat ever brought to market there, was an alderman and three times Mayor of the city, and was Governor of the State in 1876. He was a Republican in politics.

McAllister, Robert, military officer, born in Juniata County, Pa., June 1, 1813; died in Belvidere, N. J., Feb. 23, 1891. He spent the early part of his life in his native State, and at the beginning of the civil war he was engaged in iron mining at Oxford Furnace, N. J. On May 21, 1861, he was commissioned lieutenant-colonel of the 1st New Jersey Volunteers, and with it hastened to the defense of the national capital. On June 30, 1862, he was commissioned colonel of the 11th New Jersey Volunteers, then being recruited. This regiment was assigned to the 1st brigade, 2d division, 3d Army Corps, and Col. McAllister remained with it till June, 1864. In the second day's battle at Gettysburg he was wounded in the left leg and in the right foot, but, excepting a consequent retirement of three months, he served through the war, from the first Bull Run to the final surrender at Appomattox, and took part in forty engagements. In October, 1862, as senior colonel, he commanded the brigade to which his regiment was attached; on the consolidation of the 2d and 3d corps, and while a battle was in progress, he was placed temporarily in charge of the 2d brigade, 3d division, 2d Corps; and in June, 1864, he was given command of the 3d brigade (2d New Jersey brigade), 3d division, 2d Corps. For conspicuous gallantry at the first "bull pen," on Boylston Plank Road, Oct. 27, 1864, he was brevetted brigadier-general, and for meritorious services during the war was brevetted major-general March 13, 1865. After the war he was engaged in the mining and shipping of iron ore till age compelled his retirement.

McCurdy, Charles Johnson, jurist, born in Lyme, Conn., Dec. 7, 1797; died there, June 8, 1891. He was graduated at Yale College in 1817, studied law, and was admitted to the bar at New London in 1819.

He practiced there till 1856, and in the mean time was a member of the Connecticut House of Representatives in 1827, 1828, 1829, 1830, 1831, 1832, 1840, 1841, and 1844, and of the State Senate in 1832. He was Lieutenant-Governor in 1847-'48; and United States minister to Austria in 1850-'52. In 1856 he was elected a judge of the Superior Court of Connecticut; in 1862 was raised to the Supreme Court bench; and in 1867 he was retired. Judge McCurdy was a delegate to the Peace Convention in 1861, and at the time of his death was the last survivor of his class and the oldest living graduate of the college.

McDonald, Joseph Ewing, lawyer, born in Butler county, Ohio, Aug. 29, 1819; died in Indianapolis, Ind., June 21, 1891. He was removed to Indiana when seven years old, and educated by his mother till he was twelve; was then apprenticed to the saddler's trade, and worked at it for six years. He studied in Wabash College and in Asbury University; taught school, studied law, and was admitted to the bar in 1843. Soon after beginning practice, in Crawfordsville, he was elected prosecuting attorney of the county, and by re-election served till 1847. In 1848 he was elected to Congress from the 8th Indiana District as a Democrat, although the district was usually Whig; and in 1856 and 1858 he was elected Attorney-General of his State. He permanently settled in Indianapolis in 1859. In 1864 he was the unsuccessful Democratic candidate for Governor, against Oliver P. Morton. Under his direction, as chairman of the Democratic State Convention, the Democratic party in Indiana was so reorganized that it elected a majority of the Legislature in 1874, and early in 1875 he was chosen United States Senator to succeed Daniel D. Pratt, Republican. While in the Senate he served chiefly on the Committee on the Judiciary, and was a conspicuous advocate of hard money and a protective tariff. In 1876 he was appointed a member of the select committee to inquire into alleged frauds in the presidential election, and was specially charged with the investigation of the count in Louisiana. He visited that State, and made the principal argument before the electoral commission in behalf of the objectors to the count of the electoral vote of the State. He was succeeded in the United States Senate by Benjamin Harrison, and resumed his law practice.

McEnery, John, jurist, born in Virginia, in 1833; died in New Orleans, La., March 28, 1891. He was graduated at Hanover College, Madison, Ind.; was admitted to the bar in northern Louisiana, and practiced till the beginning of the civil war. He then raised the Ouchita Rifles, in the Confederate service, was commissioned lieutenant-colonel of the 4th Louisiana Regiment and, after distinguishing himself in action several times, received two severe wounds, which compelled him to retire from active service. After the war he was elected a district judge and member of the Legislature. In 1872 he received the Democratic nomination for Governor, against William Pitt Kellogg, Republican. The canvass was unusually exciting; many persons, especially colored voters, were killed; Federal troops were employed to preserve peace and allow the colored people to vote without violence or intimidation; and, although Judge McEnery received the majority of the votes that were cast, the office was awarded to Mr. Kellogg by Judge Durell's order. In 1874 Gov. Kellogg was driven from the State House by the "White League," after several men had been killed or wounded, and Judge McEnery was sent for to as-



sume the office. He and Gen. Emory, of the United States army, arrived at the State House at the same time, and Judge McEnery surrendered the office to the military, who reinstated Gov. Kellogg. Subsequently McEnery practiced law in New Orleans and Washington. He was a brother of Samuel D. McEnery, ex-Governor of Louisiana, now associate justice of the State Supreme Court.

McEntee, Jarvis, artist, born in Rondout, N. Y., July 14, 1828; died there, Jan. 27, 1891. He was educated at the Liberal Institute, Clinton, Oneida County, N. Y., the beautiful village in which Hamilton College is situated, and which has long been noted for its schools. The principal of the institute was Dr. Thomas J. Sawyer, now Professor of Theology in Tufts College. With his wife, Caroline M. Sawyer, the author, he made a delightful home for the youths under his charge, and one of the most charming visitors there was young



McEntee, whom married Gertrude, eldest daughter of Dr. Sawyer. Mrs. McEntee was a woman of great beauty, as her portrait, painted from memory by her husband after her death, attests, and of the rarest charms of character, as the artists of the "Hudson River School," who had quarters in the familiar and famous studio building in West Tenth Street, New York city, remember. In the winters of 1850-'51 Mr. McEntee studied painting with Frederic E. Church, in New York, but he did not pursue that profession until three years later, when he opened a studio in the metropolis. His first contribution to the Academy of Design exhibition was sent in 1853, and he was elected associate of that organization in 1860, and academician one year later.

In 1869, with his wife, he visited Europe, where he studied in the principal art galleries, and sketched in Italy and Switzerland. On his return he took the studio in West Tenth Street, and devoted himself to his art with an assiduity and success that soon placed him in the front rank of American painters. In delicacy and truth of delineation, in power to convey the depth of his own feeling toward Nature and to suggest her deeper charms, he is second to none in this country. Shy, sensitive, and quiet, but genial and warm-hearted, Mr. McEntee was as beloved by his friends as he was admired for his work among the larger circle of art lovers. He oftenest represented Nature in her autumn moods; but a grouping of the work of several years revealed the fact that there was no phase that he had not understood and interpreted. He made the snow of his Hudson river home as attractive as his babbling brooks, and the glimpses of ocean as strong in power to transport the lover of the sea, as his glades and leaf-strewn woods were restful and beautiful to those who knew them. He painted figure pieces somewhat in later life, and his treatment broadened with the change that a study of foreign work brought to our youthful art. Among Mr. McEntee's more important pictures are: "The Melancholy Days have come" (1860); "Indian Summer" (1861); "Late Autumn" (1863); "October Snow" (1870); "Sea from Shore" (1873); "A Song of Summer" (1876); "Virginia in 1863" (1867); "Venice" (1870); "Scribner's Mill" (1871); "Autumn," "Old Mill in Winter," "Autumn Day," "Wood Path," "Cape Ann" (1874); "Winter in the Mountains"

(1876); "Clouds" (1879); "Edge of a Wood," "November" (1880); "Kaatskill River" (1881); "Autumn Memory" (1883); "Valley of the Humboldt" (1882); "Uplands in Autumn," "Wintury River" (1883); "Yellow Autumn Woods" (1884); "Christmas Eve," "Sundown in Winter" (1885); "Asshokan—November," "Glimpse of Hunter Mountain," "Shadows of Autumn," and the "Winter Morning" (1886); "A Cliff in the Catskills" (1888). In the autumn of 1888 there was a sale in New York of seventy-five of his pictures, representing what he considered his best work for the preceding ten years, and in March, 1892, a sale of more than 100 paintings left by him.

McGowan, John, naval officer, born in Philadelphia, Pa., Dec. 3, 1805; died in Elizabeth, N. J., Jan. 18, 1891. He went to sea when thirteen years old, and was appointed a 3d lieutenant in the United States revenue marine service on May 14, 1831. On July 11, 1834, he was commissioned 2d lieutenant; on Feb. 17, 1841, 1st lieutenant; and on Dec. 3, 1852, captain. During the war with the Seminole Indians he was attached to the revenue cutter "Jackson," which vessel, in May, 1836, went to the relief of the defenseless people along the coast, and protected the citizens of St. Mark's till the arrival of a military force. He was the executive and, during a portion of the time, commanding officer of the revenue cutter "Forward" while that vessel co-operated with the navy in the war with Mexico, and was present and rendered efficient service in the attack on Tobasco and in the capture of the enemy's vessel in the river and harbor. In 1853 he resigned from the navy to take command of one of George Law's merchant vessels plying between Panama and San Francisco. On Jan. 5, 1861, he left New York city in command of the merchant steamer "Star of the West," with reinforcements and provisions for Major Anderson's garrison in Fort Sumter. He reached Charleston bar at 1.30 A. M. on the 9th, and expected to land his cargo before daybreak; but as the Confederates had removed all the harbor buoys and lights, he was obliged to grope about in the darkness till early dawn. His presence was soon reported, and armed vessels were sent from Charleston to intercept him. He continued on his course up the channel till, when opposite Fort Moultrie, he was fired on by a masked battery on Morris Island. As he was unprepared to resist, and received no support from the besieged garrison in Fort Sumter, he had to turn about and head to sea to avoid capture. This was the first shot fired in the civil war, and the failure of the attempt to relieve Fort Sumter was apparently due to the treasonable elements in President Buchanan's Cabinet. On Aug. 21, 1861, Capt. McGowan re-entered the naval service with his former rank, and he was active till his retirement in 1871. During the civil war he held several important commands, and organized and directed the famous little "Mosquito fleet" on Chesapeake Bay, for which he was highly commended. After the war and till his retirement he sustained an advisory relation to the Treasury Department.

Mackenzie, George Henry, chess player, born near Aberdeen, Scotland, March 24, 1837; died in New York city, April 13-14, 1891. He received a collegiate education, was appointed an ensign in the 60th Rifles in 1856, and served two years with his regiment at the Cape of Good Hope and in India; was promoted lieutenant, but, returning to England, sold his commission in 1861. He had gained considerable fame as a chess player, and after leaving the army he applied himself wholly to the game. For a year he played privately against some of the best players in London. In 1862 he made his first professional appearance in the London tournament, in which he defeated Herr Anderson, the Prussian champion, who had given him the odds of pawn and move, and won two games each with Medley and Deacon. In 1865 he came to New York city, joined its chess club, and won first prize in the tournaments of 1865, 1866, 1867, and 1868, also defeating Reschhelm, the Philadelphia champion, in 1866 and 1867.

He won first prize in the second American Chess Congress in Cleveland in 1871, and in the third in



Chicago in 1874, and first prize in the international tournament in New York city in 1876. In 1878 he opposed the best players of the world in the international congress of Paris and won fourth prize; in 1880 he again won first prize in the American congress; in 1882 he tied Zukertort for fourth prize in the interna-

tional congress in Vienna; and in 1883 he tied Mason and English for fifth prize in the London congress. Four years afterward he distinguished himself by winning first prize and the title of chess champion of the world in the international congress in Frankfort. In 1888 he won the second prize at Bradford, and the championship of Scotland; afterward defeated Golmay, the Cuban champion, in Havana. In the international tournament in Manchester, England, in 1890, he broke down from illness, but tied for fourth and fifth prizes. During the intervals of the national and international games he gave exhibitions in several American cities of playing blindfolded and of playing several games at once. Capt. Mackenzie was found dead in bed.

Mackenzie, Philip Wallace, inventor, born in Springfield, Mass., in 1824; died in New York city in June, 1891. He removed to New York in early life, and applied himself to improving the methods of manufacturing iron goods. In 1855 he patented the blower, cupola, and blasting furnace bearing his name for smelting iron, and followed this invention with that of the Mackenzie gas-exhauster. He spent several years in manufacturing his inventions, and in recent years occupied himself with the manufacture of gas, for which he invented many improvements.

McNeil, John, military officer, born in Halifax, Nova Scotia, Feb. 4, 1813; died in St. Louis, Mo., June 8, 1891. In early life he removed to Boston, Mass., where he learned the hatter's trade; was subsequently in business in New York city; and in 1836 went to St. Louis, and engaged in the hating business there for about twenty years. In 1844-'45 he was a member of the Missouri Legislature, and from 1855 till 1861 was President of the Pacific Insurance Company. At the beginning of the civil war he was elected colonel of the 2d regiment, United States Reserve Corps, and served for some time under Gen. Lyon. On July 17, 1861, he defeated a Confederate force under Gen. David B. Harris at Fulton, Mo.; subsequently was placed in command of the city of St. Louis by Gen. Frémont; and later was appointed colonel of the 19th Missouri Volunteers. In 1862 he was ordered to the northeastern part of the State to operate against the Confederates under Gen. Sterling Price. In October of that year a party of Confederate guerrillas captured and carried off Andrew Allsman. Col. McNeil demanded Allsman's release of the Confederate Gen. Porter, and on his refusal to surrender him, McNeil ordered the arrest and execution of ten of the most prominent Confederate sympathizing citizens of Palmyra. As soon as the Confederate Government was informed of the act, it ordered ten Federal colonels held as hostages, and demanded of the national authorities the surrender of McNeil to be tried for inhuman warfare. This demand was refused, and after a time the hostages were released. Although McNeil claimed to have acted under orders from Gens. Halleck and Schofield, he lost much prestige among Union soldiers, and was called by the

Confederates "the butcher of Palmyra." He served till the close of the war, resigning in 1865. In 1866 and 1870 he was sheriff of St. Louis County; in 1875-'76 was clerk of the criminal court; in 1876 was one of the Centennial commissioners from Missouri; in 1878 and 1882 was an inspector of the United States Indian Service; and at the time of his death he was superintendent of St. Louis branch post-office.

Maeder, Frederick George, actor and play wright, born in New York city, Sept. 11, 1840; died there, April 9, 1891. He received a commercial education, and for several years was a member of the boys' choir in Trinity Church. From early boyhood he had a strong desire to go upon the dramatic stage, and on leaving school and failing to become interested in business, he began studying to be an actor. When seventeen years old he secured an engagement with George Pauncefort, and made his first appearance in Portland, Me., on Nov. 8, 1858, as Bernardo in "Hamlet." In the season of 1860-'61 he played with John E. Owens's company, in the Varieties Theatre, New Orleans. About this time he began applying himself to dramatic composition, and his earliest successes were dramatizations of Dickens's "Great Expectations" and Miss Braddon's "Nobody's Daughter," both completed in 1861, and both given a good run on the stage. In 1861 he was a member of the Wallack-Davenport combination; in 1862 he leased the old Washington Theatre, in New York city, and dramatized "Les Misérables"; and soon afterward he took a panorama of the "American War" to Europe, and played in several English cities. On returning to the United States, he appeared in the "Ticket-of-leave Man" in Boston, and in 1864 played an engagement at the Broadway Theatre, New York, in "Solon Shingle." Immediately prior to his fatal illness he was traveling with McKee Rankin's party. Mr. Maeder dramatized or wrote many popular works, and played the leading characters in the most important. His best known plays include "Help," "Griffith Gaunt," "Shamus O'Brien," "Buffalo Bill," "The Runaway Wife" (in conjunction with Mr. Rankin), and "The Canuck."

Marthon, Joseph, naval officer, died in Shanghai harbor, China, Nov. 18, 1891. He entered the United States navy as a common seaman Oct. 1, 1861, was drafted to the "Pocahontas" at Hampton Roads Oct. 21, took part on her in the engagements at Port Royal, Stono Inlet, on Black river, and on blockading duty off Charleston; was appointed acting master's mate May 20, and acting ensign Oct. 26, 1863; served on the "Princess Royal" in the engagements at Donaldsonville and Fort Butler, La.; and was in charge of the howitzers in the tops of the "Hartford" during the passage of the forts at Mobile, Aug. 5, 1864, and for gallantry was promoted acting master, and was mentioned by Admiral Farragut in his report. On Dec. 18, 1868, he was promoted master; March 21, 1870, lieutenant; July 1, 1882, lieutenant-commander; and on Nov. 13, 1889, he was ordered to command the "Palos," on the China station. The "United Service Gazette," of London, in expressing regrets on account of his death, paid him this compliment: "The deceased was reckoned an energetic officer, a reputation he deserved, when we consider the late troubles on the river. The little 'Palos' was always on hand when wanted, and she was the first man-of-war to reach Wusueh after the massacre of the two Englishmen at that station."

Mathushek, Frederick, manufacturer, born in Mannheim, Germany, June 9, 1814; died in New York city, Nov. 9, 1891. Having in early youth a strong desire to learn piano making, he was apprenticed to a manufacturer in his native city, and when seventeen years old he made a tour of the principal cities in Germany, Austria, and Russia, studying the methods of foreign manufacture. He also displayed large inventive skill, and on visiting London was soon employed in the celebrated piano house of Erard. In 1849 he removed to New York city, worked for some time with John B. Dunham, in 1854

went with the Wallace Piano Company, and afterward established a factory of his own. His inventions include the first overstrung piano made in the United States, the double sounding-board piano, the lifting hammer rail for soft pedals, the mammoth grand piano for Gilmore's peace jubilee in Boston, the orchestral equalizing scale, the little Colibri which took the American Institute's highest diploma in 1864, and the equilibr system of piano-forte patented in 1879.

Maynard, Edward, inventor, born in Madison, N. J., April 26, 1813; died in Washington, D. C., May 4, 1891. He was appointed a cadet in the United States Military Academy in 1831, but, having a naturally delicate constitution, he was obliged to resign in the following year. In 1835 he was graduated in dental surgery, and, removing to Washington in 1836, he practiced there till March, 1890. He won high rank in this profession, invented many instruments now used by dentists generally, and discovered the diversity in the form, situation, and capacity of the maxillary alveolus. Emperor Nicholas I of Russia appointed him court dentist, and he was for many years Professor of Theory and Practice of Dentistry in the Baltimore College of Dental Surgery and in the dental department of the National University at Washington. It was through his inventions in ammunition and fire-arms that Dr. Maynard was most widely known. In 1845 he patented the tape system of primers, to take the place of the percussion cap; in 1851 he patented a breech-loading rifle, which subsequently bore his name, was widely used, and was the forerunner of the metallic cartridge breech-loader of to-day; in 1860 he devised the method for converting muzzle-loading muskets into breech-loading rifles; in 1868 he patented a plan for joining two rifle or shot barrels together by a device that would allow either barrel to expand or contract endwise independently of the other; and in 1886 he perfected his last invention, a contrivance for indicating the number of cartridges in the magazine of a repeating fire-arm at any time. The Maynard rifle was adopted by the United States Government, and by several foreign countries, and for his inventions in the line of fire-arms he received high honors from Prussia, Belgium, and Sweden.

Merrill, William E., military officer, born in Fort Howard, Wis., Oct. 11, 1837; died on a railroad train near Edgefield, Ill., Dec. 14, 1891. He was graduated at the United States Military Academy and appointed brevet 2d lieutenant of engineers in 1859, was promoted 2d lieutenant, Feb. 20, and 1st lieutenant, Aug. 6, 1861; captain, March 3, 1863; major, March 7, 1867; and lieutenant-colonel, Feb. 20, 1883. In the volunteer service he was colonel of the 1st United States Veteran Engineers from Aug. 30, 1864, till Sept. 26, 1865. During the civil war he was brevetted captain, April 16, 1862, for gallantry in an engagement before Yorktown; major, Sept. 19, following, for the battle of Chickamauga; and lieutenant-colonel and colonel, March 13, 1865, for the battles of Lookout Mountain and Missionary Ridge, and for those of Resaca and New Hope Church. At the time of his death he was United States engineer in charge of work on the Ohio river and navigable tributaries.

Messersmith, John S., physician, born in Lancaster, Pa., in 1810; died there Feb. 16, 1891. He was graduated at Jefferson Medical College, and was appointed an assistant surgeon in the United States navy Feb. 9, 1837. In 1839-'40 he was attached to the sloop "Fairfield," in the Brazilian squadron; in 1842-'43 to the brig "Dolphin," in the home squadron; in 1845 to the steamer "Col. Harney"; during the Mexican War to the bomb brig "Etna"; and in 1850-'54 to the store ship "Southampton," in the Pacific squadron. He was promoted surgeon, July 13, 1853; was on the steam frigate "Susquehanna," in the East India squadron, in 1855; at the Mare Island Navy Yard, Cal., in 1857-'59; on the steam sloop "San Jacinto" in 1861; and on the "Constellation," in the Mediterranean squadron, during the

civil war. In 1866 he was on duty at the Norfolk Navy Yard; in 1867-'68 at the Philadelphia Navy Yard; and in June, 1872, he was retired.

Milhan, John J., physician, born in France, Dec. 28, 1828; died in New York city, May 9, 1891. He was born during a visit of his parents to southern France. In 1850 he was graduated at the College of Physicians and Surgeons, and in 1851 was appointed an assistant surgeon in the United States army. His service till the beginning of the civil war was in California and the West, and comprised participation in the expedition against the Snake Indians in 1855, the Yakima expedition to Washington Territory, the Red River Indian campaign, the Kansas border troubles, and the Utah expedition in 1858. In 1861 he was appointed medical inspector of the Army of the Potomac; in 1862 he became medical director of the 3d Army Corps, and also of the hospital at Frederick, Md.; and in 1863-'64 he was medical director of the 5th Army Corps. In November, 1864, illness compelled him to retire from field service, and he was ordered on duty in New York city. He was medical director of the 3d military district, Department of the South, in 1867-'69, and resigned his commission in the army Oct. 1, 1876. During the war he was on duty at Yorktown, Williamsburg, Seven Pines, the seven days' peninsular fight, the second Bull Run, Gettysburg, Rappahanock station, in the Mine Run expedition, and at Spottsylvania and Petersburg. He was brevetted lieutenant-colonel for the Richmond campaign Dec. 2, 1864; colonel for gallant services during the war, March 13, 1865; and brigadier-general for special merit in alone attending the sick on Hart's Island, New York, during the cholera epidemic, Sept. 28, 1866. After the war he returned to New York city, where he gave the greater part of his attention to the estate left by his father, and to duties connected with numerous associations of which he was a member. He was one of the State commissioners of charities in 1882-'90.

Mines, John Flavel, journalist, born in Paris, France, Jan. 27, 1835; died in New York city, Nov. 5, 1891. He was a son of Flavel Scott Mines, D. D., and grandson of John Mines, D. D., and was graduated at Trinity College, Hartford, in 1854, and at Berkeley Divinity School, in 1857. Soon afterward he was ordained deacon and priest in the Protestant Episcopal Church, and held pastoral charges in Bound Brook, Conn., and in Bath, Me. In May, 1861, he became chaplain of the 2d Maine Volunteers; was subsequently commissioned colonel of the 1st Maine Volunteers, was taken prisoner and confined in Libby Prison, and, after being released on parole, went to Washington and engaged in journalism. After the war he was employed at various times on the New York "Tribune," Troy "Times," New York "Commercial Advertiser," Utica "Republican," "Frank Leslie's Illustrated Newspaper," New York "World," "Sunday Mercury," and "Evening Post." A series of sketches on old New York written by him and published under the pen-name "Felix Oldboy" attracted much attention. During the summer of 1891, he revived the "Felix Oldboy" sketches in the "Commercial Advertiser." He published "The Heroes of the Last Luster," a poem (New York, 1858), and "A Tour Around New York" (1888).

Moen, Philip Louis, manufacturer, born in Wilna, N. Y., Nov. 15, 1824; died in Worcester, Mass., April 23, 1891. He became a clerk in a hardware store in New York city, whose proprietors were the selling agents for the wire manufactured by Ichabod Washburn, in Worcester. In 1846 he married a daughter of Mr. Washburn, soon afterward removed to Worcester, and in 1850 entered into partnership with his father-in-law, under the firm name of I. Washburn & Moen. In 1868 the firm name was changed to the corporate name of the Washburn & Moen Manufacturing Company, and in 1870, on the death of Mr. Washburn, Mr. Moen became president of the corporation. He was also President of the Washburn Memorial Hospital, a trustee of the Worcester Polytechnic Institute, and

a Republican presidential elector in 1884. About 1875 he became the subject of a mystery that has not yet been explained. Between that year and 1882 he paid to "Doc" Levi Wilson, in sums ranging from \$500 to \$50,000 at a time, between \$300,000 and \$400,000, and when in the latter year he stopped payments Wilson brought suit against him to recover a further sum for what he called a breach of contract. The case reached the United States court in Boston in November, 1886, and instead of giving Wilson the verdict of \$113,000 against Mr. Moen that he had expected, the jury gave Mr. Moen a verdict of \$96,522 against Wilson. Mr. Moen testified that he had been blackmailed, and that Wilson had told him he was cognizant of a crime the particulars of which he threatened to publish unless paid to keep silent. He also said the crime did not concern him personally, but he declined to repeat Wilson's story. On the other side, Wilson swore that he had never threatened to publish the story, and when pressed for the narrative he would only declare "Moen can best tell you." The case attracted wide attention, and soon after the verdict Wilson went West and dropped out of public notice.

Monroe, John Albert, civil engineer, born in Swansea, Mass., in 1837; died in Providence, R. I., June 11, 1891. He was a student in Brown University at the beginning of the civil war. Giving up his studies, he entered the national army, and won distinction in the artillery. He was chief of artillery in the divisions of Gens. McDowell and Doubleday and in the corps of Gen. Hooker; commanded for more than a year the artillery camp of instruction in Washington, commanded the artillery brigade of the Army of the Potomac, and had charge of the entire artillery force at the battle of the Mine. He received high commendation for his skill and efficiency in the orders and reports of Gen. McDowell, King, Patrick, Doubleday, Hooker, Burnside, Gibbon, and Heintzelman. After the war he became a civil engineer, and was engaged in important works. In 1879 he was appointed United States assistant engineer, under the Mississippi convention, and made hydrographic, topographical, and geodetic surveys of the Mississippi river from Cairo to Memphis. Subsequently he was employed in constructing a section of the West Shore Railroad, in which he had charge of the difficult work about Rondout; in building the water works at Bismarck, N. Dak.; and as resident engineer in charge of the construction of the Thames river bridge at New London, Conn.

Morehouse, Albert Prickett, lawyer, born in Delaware County, Ohio, July 11, 1835; died in Marysville, Mo., Sept. 23, 1891. He was brought up on a farm, received a good village-school education, began teaching when eighteen years old, removed to Missouri in 1856, and was admitted to the bar in Montgomery County, Iowa, in 1860. When the civil war broke out he became 1st lieutenant in Col. Kimball's regiment. In 1862 he entered into law partnership with Col. Amos Graham in Marysville, and in 1871 relinquished active practice. He was a delegate to the National Democratic Convention in Baltimore in 1872, and to that in St. Louis in 1876; was in the State Legislature in 1877-'78 and 1883-'84; was elected Lieutenant-Governor of Missouri on the ticket with John S. Marmaduke in 1884; and on the death of the Governor in 1887, succeeded him and held the office till January, 1889.

Morgan, George Denison, financier, born in Hartford, Conn., in 1815; died in Irvington, N. Y., June 13, 1891. In 1847 he removed to New York city and engaged in the banking business, in partnership with his cousin Edwin D. Morgan, John T. Terry, and Solon Humphreys, under the firm name of E. D. Morgan & Co. He retained his connection with the firm till about 1876, when he retired to private life. During the civil war he was appointed Government agent for purchasing vessels needed for war purposes, and, applying his business methods to this duty, he saved the Government many millions of dollars. He was

officially connected with several banking, insurance, and trust companies, and was a liberal promoter of charitable enterprises.

Morris, Ernest, explorer, born in Georgetown, Texas, July 22, 1856; died in Minnesota, April 29, 1891. While a child he removed with his parents to Indianapolis, Ind., where he received a limited education, and distinguished himself by making unique collections of natural-history specimens and becoming skilled in taxidermy. When seventeen years old he set out with two companions on his first exploring expedition, intending to make his way in a skiff to New Orleans, and thence to Florida. An accidental upsetting of the boat discouraged his companions so that they returned home, leaving him to pursue his journey alone. He reached Florida, collected many interesting specimens, and, returning to Indianapolis, sold them for more than enough to pay his expenses. For his second trip he selected South America, with the intention of exploring the Amazon. He had no knowledge of the language, did not follow the routes familiar to pleasure-seekers, and went alone. He visited many of the great lakes, gathered valuable specimens of the flora and fauna, and on his return sold his collections in Brooklyn. In 1876 he delivered the first lecture on his travels, in Indianapolis. In September of that year he set out to explore Topajás river, which flows into the Amazon, about 600 miles from the sea, with articles for trading with the natives. He returned in the spring of 1877 with several thousand dollars' worth of specimens. On June 7, 1877, in response to an invitation from the Long Island Historical Society, he delivered an impressive narrative of his journey, in Brooklyn, giving much information about sections of Brazil previously unexplored, and exhibiting the heads of ten South American Indians that had been preserved by the Mundurucu nation as trophies of war. In the autumn of 1877 he made another journey to Brazil, and while there executed commissions for naturalists, colleges, and others. On this trip he explored the region of the Rio Negro, the Tefe, and the Jefura; visited several of the upper tributaries of the Amazon; and spent considerable time in the region of the lowlands of the Rio Ampiao, and in the country bordering on the Rio Napo, in Peru. While on this trip he corresponded frequently with the New York "World" in 1879 and 1880. He became widely known as the "boy explorer" and the "boy naturalist."

Morrow, Henry A., military officer, born in Virginia, July 10, 1829; died in Hot Springs, Ark., Jan. 31, 1891. He first entered the army as a private in a Maryland regiment of infantry, which was mustered for service in the Mexican War, and served from May 18, 1846, till May 30, 1847. On Aug. 15, 1862, he was commissioned colonel of the 24th Michigan Infantry; on Aug. 1, 1864, he was brevetted brigadier-general of volunteers for gallantry in the campaign before Richmond; on March 13, 1865, he received the brevet of major-general for conspicuous gallantry and for good conduct before Petersburg; and on July 19 following he was mustered out of the volunteer service. During the civil war he commanded expeditions to Port Royal, Va., in April, and to Westmoreland Court-house, Va., in June, 1863; and took part in the battles of Fredericksburg, Fitzhugh Crossing, Chancellorsville, Gettysburg (wounded), the Wilderness (wounded), Dabney's Mills, Va. (severely wounded), and before Petersburg. On the reorganization of the regular army he was appointed lieutenant-colonel 36th United States Infantry, on July 28, 1866; was brevetted colonel, March 2, 1867; was transferred to the 13th Infantry, March 15, 1869; and was promoted colonel 21st Infantry, April 27, 1879. In 1885 he commanded a brigade at Crisfield, Kansas, during the Indian hostilities. He was officially stationed at Fort Sidney, Neb., at the time of his death.

Morton, Marcus, jurist, born in Taunton, Mass., April 8, 1819; died in Andover, Mass., Feb. 10, 1891. He was graduated at Brown University in 1842; studied law two years in the Cambridge Law School, and in

the office of Sprague & Gray, in Boston; and was admitted to the bar of Suffolk County in 1841. He practiced in Boston till 1850, and then settled permanently in Andover. In 1853 he was a member of the State Constitutional Convention, and in 1858 was a member of the Massachusetts House of Representatives and chairman of the Committee on Elections. In April, 1858, he was appointed a justice of the Superior Court of Suffolk County, and in the following year, on the reorganization of the judicial system of the State, he was appointed a justice of the Superior Court. After a service of ten years he was promoted to the bench of the Supreme Court, succeeding his father, who had sat on the same bench for fifteen years. In January, 1882, on the resignation of Chief Justice Gray, Judge Morton was appointed chief justice, and he held the office till November, 1890, when failing health led him to resign.

Mowbray, George W., inventor, born in Lewes, England, in 1815; died in North Adams, Mass., June 21, 1891. He was educated for a chemist, and came to the United States in 1853. After spending five years at the California gold mines, he was employed as chemist in the Pennsylvania oil region till 1868, and then removed to North Adams. There he invented the commercial form of nitro-glycerin and superintended its manufacture and use for the construction of the Hoosac Tunnel. After the completion of the tunnel he continued the manufacture of the explosive at North Adams, and made experiments that resulted in the invention of a smokeless powder, the improvement of nitro-glycerin for general blasting, and of an improved method of insulating electric wires. For several years he had been consulting chemist of the Maxim and Nordenfeldt Arms Company of London, and since 1885 had been chemist of the Zylonite Company of North Adams.

Murdock, Samuel K., actor, born in Philadelphia, Pa., in February, 1816; died there, Dec. 15, 1891. He was a younger brother of James E. Murdock, the actor, was graduated at Jefferson Medical College, and was elected brigadier-general of Pennsylvania militia in 1849. In 1850 he went to California, and for a time practiced medicine, then became a miner, and afterward a merchant in San Francisco. While there he adopted the stage as a profession, and on Jan. 16, 1852, he made his first appearance as Pierre in "Venice Preserved," at the Jenny Lind Theatre. During Anna Bishop's operatic engagement he supported her in the German language. In 1855 he appeared as Pierre to his brother's Jaffier, at the Baltimore Museum, and on April 23 of the same year he made his first appearance in Philadelphia as St. Pierre in "The Wife," at the City Museum. He served in the national army through the civil war, then resumed his profession, and, retiring from the stage in 1867, established a school of elocution in Philadelphia.

Mulford, Prentice, journalist, born in Sag Harbor, Long Island, N. Y., in 1834; died in Sheepshead Bay, N. Y., in May, 1891. After attending the village school, he aided his father, who owned the Sag Harbor Hotel, on whose death he succeeded to the business and held it till 1853. In 1856 he shipped as a common sailor on a clipper ship bound for China, but left it on reaching San Francisco, and, after remaining there a short time, again went to sea in a whaling schooner as cook. This trip was of short duration, and, returning to California, he spent several years in placer mining in the wildest part of the gold fields. Not meeting the success he desired, he opened a school in a Tuolumne County mining camp, but in the early part of the copper excitement in Stanislaus County, in 1862-'63, he joined the throng and staked a claim in the short-lived town of Copperopolis. Thence he followed the rush to the Nevada silver mines, where he again failed of success, and determined to return to the Sonora region. On the way he was lost and nearly perished in the Sierra mountains. Failing in all his mining schemes, he became an itinerant comic lecturer, till he deter-

mined to try journalism. He had written for the "Union Democrat" in 1860, and now began following it more closely. In 1864 he was defeated as a candidate for the Legislature; in 1865 he became associate editor of the San Francisco "Golden Era"; in 1867-'68 he was editor of a daily paper in Stockton, and also wrote for various publications; and about 1870 he came to New York. He then made a trip on foot through the French provinces, wrote for several newspapers and magazines from the Philadelphia, Paris, and Vienna exhibitions; returned to San Francisco and edited the "Overland Monthly" and the San Francisco "Chronicle"; and about 1886 came to New York again, and held editorial places on the "Daily Graphic" and the "Star." In the last few years of his life he was interested in the study of spiritualism and metaphysics. He built himself a lonely hut on the shore of Staten Island, where he lived winter and summer; spent much time in pleasant weather in his canoe "White Crow," on Sheepshead Bay, and became editor of "The White Cross Library." He was found dead and alone in his canoe in the lower part of Sheepshead Bay on May 30, with several sheets of manuscript beside him, dated May 25, which read as if dictated by a spiritual medium, but which was claimed by his publisher as part of an expected article for the "White Cross Library." Mr. Mulford was the author of several books, including "The Swamp Angel" (New York, 1888) and "Life by Land and Sea" (1889).

Nelson, Homer Augustus, lawyer, born in Poughkeepsie, N. Y., Aug. 31, 1829; died there, April 25, 1891. He received a public-school education, was admitted to the bar in 1855, and practiced his profession till his death. He was elected county judge of Dutchess County in 1855, and served till November, 1862, when he was elected to Congress as a Democrat. He sat in that body one term, and also served as a member of the committees on Indian Affairs and on Unfinished Business. At the close of his term, during which he was known as a war Democrat, he declined a diplomatic appointment. In 1867 he was a delegate-at-large to the State Constitutional Convention, where he opposed the form adopted, which was rejected by the people; and in the same year he was elected Secretary of State of New York, serving till the close of 1871. He then declined a nomination for the State Senate, and confined himself wholly to his law practice till 1881, when he accepted a nomination for the State Senate and was elected. In 1890 he was appointed a member of the commission to report a revision of the judiciary article in the State Constitution. Judge Nelson was engaged as counsel in notable suits, including the Vassar will contest and the trial of Jacob Sharp.

Norman, Helen, singer, born in London, England, in 1858; died in New York city, Jan. 5, 1891. She studied singing with Garcia and Mori in London, made her first public appearance in one of the Schubert Society's concerts in that city, and after further study became a popular opera singer. After singing with success in the Royal Albert Hall, the London Opera House, and Covent Garden, she made a tour through the provinces with Charles Santley. She then returned to the Royal Albert Hall and appeared in "Parsifal," and at the close of that engagement made a tour with the Grand English Opera Company. After coming to the United States she sang in the concerts of the New York Symphony and Oratorio Societies, the Archer concerts, and others, and also traveled with her husband, John H. Norman, the organist, assisting him in his organ recitals with vocal selections.

Norton, Charles B., journalist, born in Hartford, Conn., July 1, 1825; died in Chicago, Ill., Jan. 29, 1891. In 1850 he came to New York city and established himself in the publishing and book-selling business, subsequently making a specialty of collecting for libraries. In 1852 he began publishing fortnightly "Norton's Literary Gazette and Publishers' Circular," and he did much to establish book-trade journalism. He removed to Clinton Hall in 1855, and

his store soon became the resort of librarians, literary people, and book collectors. He published a large number of books, including the first issue of Poole's "Index to Periodical Literature," inspired many more, and wrote several. On the formation of the Book Publishers' Association, in 1855, he became its assistant secretary and librarian, and turned over to it his periodical, the name of which was changed to "The American Publishers' Circular and Literary Gazette." In July of that year Mr. Norton relinquished the editorial management of the publication, and thereafter was more particularly employed in matters pertaining to world's fairs. He was a commissioner to the World's Fair in London in 1851; a juror in that of New York in 1853; the first to propose the Centennial Exhibition; a commissioner to the Paris Exposition in 1867; superintendent of the press bureau in the Centennial Exhibition in 1873-76; the inspirer and manager of the foreign exhibition in Boston in 1883; and an influential official in the American Exhibition in London in 1887. A few days before his death he went to Chicago, on the invitation of the promoters of the Columbian Exposition, to aid in organizing that enterprise. He served in the national army through the civil war, and at its close he was brevetted brigadier-general. On his return from the American Exhibition in London he became editor of the "Civil Service Chronicle." Gen. Norton was the author of an official report on "Killed Guns and Munitions of War"; a "History of the Centennial Exhibition"; and a pamphlet on "World's Fairs" (1891).

Norton, George Salmon, physician, born in Great Barrington, Mass., Dec. 8, 1851; died in New York city, Jan. 31, 1891. He was graduated at the New York Homoeopathic Medical College in 1872, and had since practiced in New York city. He made a specialty of diseases of the eye, and became surgeon and a director of the New York Ophthalmic Hospital in 1875, Professor of Ophthalmology in the New York Homoeopathic Medical College in 1888, President of the County Medical Society of New York in 1886, and editor of the "Journal of Ophthalmology, Otolaryngology" in 1889. Dr. Norton was a member of the 9th International Homoeopathic Medical Congress, and President of the American Homoeopathic Ophthalmological and Otolaryngological Society.

O'Beirne, Richard F., military officer, born in Canada, Oct. 25, 1833; died in New York city, Feb. 24, 1891. He was a son of Judge O'Beirne, of Detroit, Mich., who was the private secretary of Lewis Cass when the latter was Secretary of State in President Buchanan's Cabinet. Richard was appointed from civil life 1st lieutenant in the 14th United States Infantry on May 31, 1861; was promoted captain, Oct. 25 following; transferred to the 32d Infantry, Sept. 21, 1866, and to the 21st Infantry, April 19, 1869; promoted major, March 20, 1879; and lieutenant-colonel of the 15th Infantry, April 18, 1864. He served through the war with the Army of the Potomac; was brevetted major for gallantry at North Anna, Va., and lieutenant-colonel for the battle on the Weldon Railroad, both brevets dating from August, 1864; served for nine years in Oregon and Arizona, taking part in several Apache and Ute Indian campaigns; and was on Gen. Schofield's staff when the latter was superintendent of the United States Military Academy.

Olmstead, John W., clergyman, born in Saratoga County, N. Y., Nov. 13, 1816; died in Manchester, Mass., Aug. 31, 1891. He received an academic education, entered the ministry of the Baptist Church, and held pastorates of five years each in Little Falls, N. Y., and in Chelsea, Mass., and for the rest of his life, or for more than forty years, he was connected with religious journalism. His first editorial appointment was on the "Christian Reflector," and when that was consolidated with the "Christian Watchman" he remained in editorial control. Subsequently the "Christian Era" was merged in the combination, and he then became associate editor with the Rev. Franklin Johnson, D.D., and the Rev.

George C. Lorimer, D.D. In 1877 failing health forced him into a temporary retirement, and on returning to editorial work he established and conducted for three years "The Watch Tower," in New York city. In 1881 he returned to his former place on "The Watchman," and remained there till within two months of his death.

Packer, John B., lawyer, born in Sunbury, Pa., March 21, 1824; died there, July 7, 1891. He was educated for a civil engineer, and when fifteen years old was employed on the survey of the Wisconsin Canal, and afterward on the State's exploration of the route between Harrisburg and Pittsburg on which the Pennsylvania Railroad was subsequently built. He was admitted to the bar in 1844, and continued in practice till his death. He was elected to the State Assembly in 1849 and 1850, after serving two years as district-attorney of his county, and was elected to Congress from the 14th Pennsylvania District as a Republican in 1868, 1870, 1872, and 1874, declining a unanimous re-nomination in 1876.

Paddock, Benjamin Henry, clergyman, born in Norwich, Conn., Feb. 29, 1828; died in Boston, Mass., March 9, 1891. He was graduated at Trinity College, Hartford, Conn., in 1848, and the year following taught in the Episcopal Academy in Cheshire, Conn. He then entered the General Theological Seminary in New York city, and was graduated there in 1852. While in deacon's orders he was an assistant in the Church of the Epiphany in New York city, and in 1854 he succeeded his father as rector of Trinity Church, Norwich, where he remained until called in 1860 to the rectorship of Christ Church, Detroit, Mich. In 1869 he left Detroit to become rector of Grace Church, Brooklyn, N. Y., which office he held until 1873, when he was consecrated Bishop of Massachusetts on Sept. 17, 1873, in his own church at Brooklyn. The period of his episcopate was marked by a decline of party feeling in the diocese and the substitution thereof of a spirit of harmony between opposite schools of thought, a result due in great measure to the amiable wisdom and skillful administration of Bishop Paddock.

Parrish, Joseph, physician, born in Philadelphia, Pa., Nov. 11, 1818; died in Burlington, N. J., Jan. 15, 1891. His parents were members of the Society of Friends, who educated him at home and in the schools of the Friends. He was graduated at the medical department of the University of Pennsylvania in 1844, and settled in Burlington to practice. Within a short time he established the New Jersey "Medical Reporter," which was afterward removed to Philadelphia, and was appointed physician to Burlington College and St. Mary's Hall. Within ten years he was appointed to a professorship in the Philadelphia Medical College, but he was compelled to resign at the close of his first term by failing health. Threatened with a pulmonary trouble, he sought relief in Alabama, in travel through England, France, and Germany, and finally in mountain climbing in Switzerland. The latter proved beneficial, and he prolonged his travels for the purpose of studying the hospital systems of Europe. On his return to Philadelphia he was appointed superintendent of the newly chartered State training school for idiots, now at Media. He remained here till 1863, when he accepted an office in the Sanitary Commission, and, besides other duties, edited its "Bulletins." In 1866 he organized a movement that resulted in a "society for the reformation of inebriates and for the moral and social elevation of the ignorant and neglected classes," of which he became president, and which, under his direction, established the Pennsylvania Sanitarium, also at Media. Of this institution he was appointed superintendent. In 1870 he aided in forming, and became secretary of, the American Association for the Study and Cure of Inebriety, of which Dr. Williard Parker was elected president. Two years afterward Dr. Parker resigned, and Dr. Parrish, succeeding him, held the office till his death. The success of the Media institution attracted the at-

tention of English specialists. Parliament appointed a commission to investigate the subject of inebriety and its cure, and by special invitation the American association delegated Dr. Parrish and Dr. Dodge, of Binghamton, N. Y., to explain the American system before the commission. The result of this commission's work was the establishment of the Dalrymple Home on the general American plan. In 1872, while retaining his office at Media, Dr. Parrish took temporary charge of the Maryland Inebriate Asylum, and in two years restored its effectiveness; in 1876 he resigned the superintendency of the sanitarium and opened a private home for invalids at Burlington; and in 1885 he was elected President of the New Jersey Medical Society. A "Memoir" on the life-work of Dr. Parrish was presented to the New Jersey Historical Society, by Dr. Samuel H. Pennington, on May 21, 1891.

Parton, James, author, born in Canterbury, England, Feb. 9, 1822; died in Newburyport, Mass., Oct. 17, 1891. He came to the United States when five years old, and was educated in the public schools of

New York city and in a private one at White Plains, N. Y. A legacy enabled him to continue his studies in Europe, and on his return he established a high-grade school in Philadelphia. While teaching he began literary work, and was soon afterward induced to take a place in the office of the "Home Journal," New York city, with which he was regularly connected for three years, and to which he contributed for many more. His success in literature caused him to abandon teaching. He became a regular contributor to the New York "Ledger," wrote for magazines, and published many books, notably biographies.

In January, 1856, he married Sara Payson Willis Eldredge, sister of Nathaniel P. Willis, widow of Charles H. Eldredge, who was popularly known by her pen-name "Fannie Fern." She died in October, 1872, and two years afterward he married Ellen W. Eldredge, his wife's daughter by her first husband. This marriage was shown to be illegal under the Massachusetts law, and Mr. Parton and his wife lived apart till the Legislature, on his petition, amended the law. His numerous publications include: "Life of Horace Greeley" (New York, 1855; new edition, Boston, 1885); "Humorous Poetry of the English Language, from Chaucer to Saxe" (1856); "The Life and Times of Aaron Burr" (1857; new edition, 1864); "Life of Andrew Jackson" (3 volumes, 1859-'60); "Gen. Butler in New Orleans" (1863; new edition, 1882); "Life and Times of Benjamin Franklin" (1864); "Famous Americans of Recent Times" (Boston, 1867); "The People's Book of Biography" (Hartford, 1868); "Triumphs of Enterprise, Ingenuity, and Public Spirit" (Hartford, 1871); "The Words of Washington" (1872); "Fanny Fern; a Memorial Volume" (New York, 1873); "Life of Thomas Jefferson" (Boston, 1874); "Le Parnasse Français. A Book of French Poetry from A. D. 1550 to the Present Time" (Boston, 1877); "Caricature and other Comic Art, in all Times and Many Lands" (New York, 1877); "Life of Voltaire" (Boston, 1881); "Noted Women of Europe and America" (Hartford, 1883); "Captains of Industry, or Men of Business who did Something besides making Money" (Boston, 1884); and "Captains of Industry" (second series, Boston, 1891).

Pattison, Thomas, naval officer, born in Troy, N. Y., Feb. 8, 1822; died in New Brighton, Staten Island, N. Y., Dec. 17, 1891. He entered the United States navy as a midshipman March 2, 1839; was promoted passed midshipman July 2, 1845, master Feb. 17, 1854, lieutenant Sept. 19 following, lieutenant commander July 16, 1862, commander March 3, 1865, captain July 3, 1870, commodore Dec. 11, 1877, and

rear-admiral Nov. 1, 1883; and was retired Feb. 8, 1884. During his naval career he was on sea service twenty years eleven months, on shore or other duty fourteen years six months, and was unemployed sixteen years five months. He served in the Mexican War on the steamers "Scorpion" and "Princeton," the frigates "Raritan" and "Cumberland," the ordnance ship "Electra," and the gunboat "Referee." In the civil war he was executive officer of the "Perry," which captured the Confederate privateer "Savannah"; commanded the "Philadelphia," the heaviest-armed vessel in the Potomac flotilla, in 1861; and commanded the naval station at Memphis from 1863 till March 3, 1865. He was commandant of the naval station at Port Royal, S. C., in 1878-'80, and of the navy yard at Washington, D. C., in 1880-'83.

Perry, Horace Justus, diplomatist, born in Keene, N. H., Jan. 23, 1824; died in Lisbon, Portugal, Feb. 23, 1891. He was graduated at Harvard College in 1844; became a volunteer aid on the staff of Gen. Shields in Mexico in 1847, and was secretary of the United States legation in Spain from 1849 till 1869, excepting a period of five or six years, when he was engaged in telegraph construction. While in Spain he rendered the United States most important service. In 1854 he settled satisfactorily the difficulties growing out of the "Black Warrior" affair, which had seriously threatened the peaceful relations of the two countries; and at the same time he nearly concluded a treaty for commercial reciprocity between the United States and Cuba. In 1861 he secured from the Spanish Government a proclamation of neutrality, under which the Confederate cruiser "Sumter" was allowed to remain at Cadiz only twenty-four hours, and was forced thereby to take refuge at Gibraltar, where she was effectually blockaded by American war vessels. During the civil war he discharged the duties of *chargé d'affaires*, in addition to those of secretary of legation. Mr. Perry married a daughter of Don Nicholas Coronado, of Badajoz, in 1852, a lady widely known in Spain as a lyric poet.

Phelan, James, lawyer, born in Aberdeen, Miss., Dec. 7, 1856; died in Nassau, West Indies, Jan. 30, 1891. He removed to Memphis in 1867; was educated in the Kentucky Military Institute, the University of Leipzig, and the Gymnasium of St. Thomas; received the degree of Ph. D. in 1878, and, returning to Memphis, studied law and was admitted to the bar in 1881. In 1886 and 1888 he was elected to Congress from the 10th Tennessee District as a Democrat, and he served on the committees on Commerce and on Reform in the Civil Service. He was seeking relief from consumption at the time of his death.

Piatt, Donn, journalist, born in Cincinnati, Ohio, June 29, 1819; died in Cleveland, Ohio, Nov. 12, 1891. He was educated at St. Xavier's College; studied law, and was admitted to the bar; was appointed judge of the Court of Common Pleas of Hamilton County in 1851, and at the close of his term was appointed secretary of the United States legation at Paris, under John Y. Mason, and served during the administrations of Presidents Pierce and Buchanan. On the death of Minister Mason, Mr. Piatt was *chargé d'affaires* for nearly a year. Returning to the United States, he entered the presidential canvass, and, with Robert E. Schenck, stamped Southern Illinois for Mr. Lincoln. On the appointment of Mr. Schenck to a high military command, Mr. Piatt was made a member of his staff and received a colonel's commission. During his military service he issued an order to Gen. Milroy to evacuate Winchester, Va., and fall back on Harper's Ferry, which was countermanded by Gen. Halleck, and three days afterward Gen. Milroy had to cut his way through a surrounding Confederate force, which caused a loss of 2,000 men. Later, in the absence of Gen. Schenck, Col. Piatt ordered Gen. Birney to recruit a negro brigade in Maryland. This order aroused the extreme indignation of President Lincoln, who threatened to dismiss its author from the army in disgrace. He was judge-advocate of the commission that investigated the charges



against Gen. Don Carlos Buell, and favored his acquittal. After the war Col. Piatt became Washington correspondent of the Cincinnati "Commercial," joined George Alfred Townsend in establishing the "Capital" at Washington, and in 1888 became editor of "Belford's Magazine," New York. At the time of his death he was engaged with Gen. Charles M. Cist, of Cincinnati, in preparing a life of Gen. George H. Thomas. His principal publication was "Memoirs of the Men who saved the Nation" (1887).

Pike, Albert, lawyer, born in Boston, Mass., Dec. 29, 1809; died in Washington, D. C., April 2, 1891. He



entered Harvard College in 1825, but left before completing the course to become principal of the Newburyport Grammar School. In 1831 he set out on a tedious journey to Santa Fé, New Mexico, making considerable distances on foot, and spending the greater part of the year in the trip. Dur-

ing a part of 1832 he was a clerk in Santa Fé, and in September he joined a party of 45 men in an exploring expedition down Pecos river, across the "staked plains," and to the head waters of Brazos river, reaching Fort Smith, Ark., with four companies, in December. He then taught school, became associate editor of the "Arkansas Advocate" in 1833, and its proprietor soon afterward, and sold it to engage in law practice in 1836. As a lawyer he soon became widely known, and, besides having much business as counsel for the Indians in their sale of lands to the Federal Government, he was commissioned to revise the statutes of Arkansas. During the Mexican War he commanded a squadron of Arkansas volunteer cavalry, took part in the battle of Buena Vista, and received the surrender of Mampimi in 1847. At the outbreak of the civil war he was appointed Indian commissioner by the Confederate Government, negotiated treaties of alliance between the Confederacy and several powerful Indian tribes, commanded the Department of the Indian Territory and all the Indian regiments, and held the rank of brigadier-general. He resigned from the army before the close of the war, and became a judge of the Supreme Court of Arkansas. In 1866 he removed to Memphis to resume the practice of law, but in the following year bought an interest in, and took the editorship of, the "Memphis Appeal." In 1868 he sold this interest and settled in Washington, where he practiced till 1880, when he retired from professional work. Gen. Pike was a Freemason, and prepared for the Masonic order nearly 30 volumes. He published "Prose Sketches and Poems" (1834), and contributed to "Blackwood's Magazine" a series of "Hymns to the Gods."

Pineo, Peter, physician, born in Cornwallis, Nova Scotia, in 1825; died in West Somerville, Mass., Sept. 10, 1891. At the beginning of the civil war he was practicing medicine in Boston, and also was Professor of Medical Jurisprudence and Clinical Medicine at the Castleton (Vt.) Medical College. He was commissioned surgeon of the 9th Massachusetts Volunteers early in 1861, and was appointed brigade-surgeon of volunteers by President Lincoln in August. In the Virginia campaign of 1861-'62 he served on the staffs of Gen. James S. Wadsworth and Gen. Rufus King; in Gen. Pope's campaign he was on the staff of Gen. McDowell; and in the battles of Antietam and South Mountain he was medical director of the 1st Army Corps on the staff of Gen. Meade. In December, 1862, he was ordered to take charge of the Douglas General Hospital in Washington; in March, 1863, he was pro-

moted to be lieutenant-colonel and medical inspector United States army; and in 1863-'65 he inspected all the armies on the Atlantic and Gulf coasts, between Washington and Texas, and also the general hospitals at Fort Monroe, Norfolk, and Portsmouth. Dr. Pineo was assigned to duty at Fort Monroe as consulting surgeon to Jefferson Davis while he was confined there. In late years he lived in comparative retirement, though occasionally serving as an expert in medico-legal cases.

Pineton, Charles Adolphe, Marquis de Chambrun and d'Amfreville, lawyer, born in Marvejols, department of Lozère, France, Aug. 10, 1831; died in New York city, Sept. 14, 1891. He was educated in the Ecole des Chartes and in the University of Paris, receiving the degree of LL. D. from the latter, and for several years was an officer of the household of the Comte de Chambord. In 1865 he was sent to the United States by Drouyn de L'Illys, then French Minister of Foreign Affairs, to study and report on the causes of the American civil war. He was cordially received by President Lincoln, who invited him to be present at the surrender of Richmond. In 1871 he was appointed legal adviser to the French legation in Washington, and he held the office at the time of his death. He was the author of "Le Régime Parlementaire" (1856); "Le Pouvoir Exécutif" (1872); and "Droits et Libertés aux Etats Unis" (1890). His wife was a granddaughter of Lafayette.

Pitkin, Perley Peabody, military officer, born in Marshfield, Vt., March 9, 1826; died in Montpelier, Vt., July 28, 1891. He received a common-school education, and spent three years in California in the early days of the gold discovery. Returning to Vermont, he settled in East Montpelier, which he represented in the Legislature in 1859 and 1860 and at the extra session at the beginning of the civil war. On June 6, 1861, he was commissioned quartermaster of the 2d Vermont Volunteers; Feb. 21, 1862, was promoted assistant quartermaster of volunteers, with the rank of captain; Aug. 2, 1864, promoted quartermaster, with the rank of colonel; and in November following he resigned from the army to become Quartermaster-General of Vermont, on election by the Legislature. While in the army he had charge of the entire wagon train of the Army of the Potomac, which would have stretched out forty miles in a straight line, during the Wilderness campaign, and was also in charge of the base of supplies for the army in Gen. Grant's campaign in 1864. The transportation, too, of many thousands of recruits and prisoners, and the care of an army of sick and wounded soldiers, were a part of his executive duties. In 1865-'69 he was re-elected Quartermaster-General of Vermont, thus holding the office during the time the State was guarding its frontier against the Fenians. In 1872 he represented Montpelier in the Legislature, and since 1865 had been engaged in manufacturing.

Plumb, Preston B., legislator, born in Delaware County, Ohio, Oct. 12, 1837; died in Washington, D. C., Dec. 20, 1891. He was brought up on a farm, received a district-school education, and was apprenticed to the printer's trade in Gambier. In 1856 he removed to Leavenworth, Kansas, and in 1857 founded the town of Emporia and established the "Emporia News." In the latter year he was secretary of the Free State Convention in Lawrence, which repudiated the Leecompton Constitution, and in 1859 he was a delegate to the Leavenworth Constitutional Convention and a signer of the Constitution there framed. He was admitted to the bar in 1861, elected to the Kansas Assembly in 1862, where he was chairman of the Judiciary Committee, and was appointed a 2d lieutenant in the 11th Kansas Infantry in August of the latter year. By promotions he served as captain, major, and lieutenant-colonel of his regiment, and was commissioned its colonel, but was not mustered in through lack of a proper officer. After the war he resumed law practice, but in 1867 re-entered public life as member of the Assembly. He served there two years, in the last one as Speaker. In 1868 he

formed a law partnership with Judge Ruggles, but in 1872 he was compelled to retire from practice by failing health, and then engaged in banking. In January, 1873, he was elected President of the Emporia National Bank, and he held the office till 1877. He advocated the election of Horace Greeley in 1872, and was President of the State Republican Convention in 1876. In 1877 he was elected United States Senator, and in 1883 and 1888 was re-elected, the last time for the term ending March 3, 1895. At the time of his death he was chairman of the Committee on Public Lands and member of the standing committees on Agriculture and Forestry, on Appropriations, and on the Organization, Conduct, and Expenditures of the Executive Departments, and of the select committees on transportation and sale of meat products and on inquiry into the administrative service of the Senate. Senator Plumb was an indefatigable worker and his death was at least hastened by his intense activity.

Poillon, Richard, shipwright, born in New York city in 1818, died there, July 4, 1891. He was a member of an old French Huguenot family that had been engaged in boat building at the foot of Bridge Street for more than a century, and entered the firm in 1840. During the civil war he built several gunboats for the Federal Government, and in 1872 he built the first foreign-made naval cruisers for the Japanese Government. Since 1864 he had given special attention to the construction of yachts, his first noted success being the "Sappho," which was built on original lines, and one of his last was the ocean prize winner "Coronet," which defeated the "Dauntless."

Polk, Sarah Childress, mistress of the White House, born near Murfreesborough, Tenn., Sept. 4, 1803; died in Nashville, Tenn., Aug. 14, 1891. She was the daughter of Joel and Elizabeth Childress, was educated at the Moravian Institute, Salem, N. C., and married James Knox Polk, afterward eleventh President of the United States, in 1824. In the year following his marriage Mr. Polk was elected to Congress, and Mrs. Polk accompanied him to Washington. On March 4, 1845, on the inauguration of her husband as President, she became



mistress of the White House. It was soon observed that she had determined to manage the presidential mansion according to her own ideas of propriety and the dignity of the place. She began holding weekly receptions, but, to the surprise of those accustomed to participating in the formal life of the White House, she abolished the custom of giving refreshments to all guests and forbade dancing at the receptions, saying that neither custom comported



with the dignity of the official residence of the nation's Chief Executive. In spite of these innovations she maintained her popularity, and, being a brilliant

conversationalist, she was particularly esteemed by the representatives of foreign governments. Since the death of her husband she had lived quietly in Polk Place, Nashville (see engraving), in the foreground of which is the tomb of the ex-President, and for several years had been receiving a pension of \$5,000 per annum from the Federal Government.

Pomeroy, Samuel Clarke, legislator, born in Southamptton, Mass., Jan. 3, 1816; died in Whitesville, Mass., Aug. 27, 1891. He was educated at Amherst College, and after spending several years in New York returned to Massachusetts and held various public offices, including that of member of the Assembly in 1852-'53. He was one of the organizers of the New England Emigrant Aid Society, became its financial agent, and in 1854 established a New England colony at Lawrence, Kansas, of which city he was elected mayor in 1859. Politically, he was a member of the Free State Convention at Lawrence in 1859, and was a delegate to the National Republican Conventions of 1856 and 1860. During the famine in Kansas, in 1860-'61, he was president of the relief committee. In 1861 he was elected United States Senator as a Republican, in 1867 was re-elected, and in 1873 was defeated. In the Senate he was chairman of the standing Committee on Public Lands and of the select Committee on Revision of the Rules, was a member of the Committee on Post-Offices and Post-Roads, and, from his general advocacy of subsidy measures, received the sobriquet of "Subsidy Pomeroy." While he was a candidate for a third term, charges of bribery were preferred against him in the Legislature, which sent them to the United States Senate. There a special committee reported that they were not sustained, and in the State courts a *nolle prosequi* was entered on the ground that there was not sufficient evidence to secure a conviction. But the affair cost him a second re-election, and he afterward spent the most of his time in Washington.

Potter, Platt, jurist, born in Galway, Saratoga County, N. Y., April 6, 1800; died in Schenectady, N. Y., Aug. 11, 1891. He was graduated at Schenectady Academy in 1820, and was admitted to the bar in 1824. He practiced in Minerville till 1833, then returned to Schenectady and formed a law partnership with Alonzo C. Paige, his former preceptor. In 1830 he was elected to the Assembly, from 1839 till 1847 he was district attorney of Schenectady County and, for many years prior to the abolition of the Court of Chancery, in 1847, he was also a master and examiner in that court. He was elected a justice of the New York Supreme Court in 1857, and was re-elected without opposition in 1865. During his service on this bench he was also a judge of the Court of Appeals. In 1870 he caused the arrest of Henry Ray, a member of the Assembly, for failing to answer a subpoena, for which Judge Potter was charged with a high breach of privilege and summoned before the Assembly to answer. He there defended his course with such clearness that he was acquitted of the charge and his argument was published in a pamphlet. In the same year he was elected President of the State Judicial Convention in Rochester. Judge Potter was chosen a trustee of Union College in 1865. He published "Potter's Dwaris" (1871); an enlargement of John Willard's "Equity Jurisprudence" (1875); and "Potter on Corporations" (1879).

Pottle, Emory B., lawyer, born in Naples, Ontario County, N. Y., July 4, 1815; died there, April 18, 1891. He received a common-school and academical education; studied law in Springfield, Ill., and was admitted to the bar; was elected to the New York Assembly as a Free-soil Whig in 1847, and was elected to Congress in 1856 and 1858. In the latter body he was a member of the committees on Naval Affairs and on Expenditures in the Navy Department. In 1867 he aided in preparing the wool and woolen schedule incorporated in the tariff law of that year. Mr. Pottle was for many years actively interested in the vineyard and wool-growing interests of the country, and was President of the State Grape Growers'

Society and secretary of the National Wool Growers' Association.

Pratt, Charles, philanthropist, born in Watertown, Mass., Oct. 2, 1839; died in New York city, May 4, 1891. When but ten years of age he left home to



work on a farm in his native town, where he remained about three years, attending school a few months during the winter. He then spent a year in Boston as clerk in a grocery, at the end of which time he began to learn the machinist's trade, which he afterward followed in Newton. At the age of eighteen he entered Wesleyan Academy, Wilbraham. Here he boarded himself, struggling in every way to get an edu-

cation. The year spent here completed his school life. On leaving the academy he entered the employ of a paint and oil firm in Boston, and while here he became much interested in the Mercantile Library; and his connection with this, and later with the Mercantile Library in New York, had a marked influence upon him. In 1851 he went to New York as clerk for Messrs. Schenck & Downing, who were in the oil, paint, and glass business, and for twenty-five years he continued at the same place, but not in the capacity of clerk, for in 1854 he, with two others, bought the paint and oil part of the concern. In 1867 his firm was dissolved, the oil portion of the business coming into the hands of Charles Pratt & Co. Mr. Pratt was among the first to perceive the possibilities of the petroleum trade when it began to be developed in the Pennsylvania oil fields in 1860, and he early devoted himself to the refining of the crude product, endeavoring to put upon the market the best grade of oil; to this he attached his own name, and Pratt's astral oil became known the world over. He was also an officer of the Standard Oil Company, and was interested in many other business enterprises. As his fortune increased, his sense of responsibility for the use of his riches increased also, and he gave liberally and discriminatingly to religious, educational, and charitable causes, not only in Brooklyn, which was for many years his home, but throughout the country. He contributed nearly half the cost of the Emmanuel Baptist Church of Brooklyn, of which he was a member. Although denied the advantages of extended school education, he appreciated keenly its importance, and was a life-long friend of education. For nearly twenty-five years he was a trustee, and during most of this period President of the Board of Trustees of the Adelphi Academy, Brooklyn, contributing at different times \$200,000 for its use. But while greatly interested in existing institutions, he came to feel that they did not meet the requirements of that large class of young people who wish to fit themselves for usefulness among the world's workers. Accordingly, after mature thought and thorough study of schools at home and abroad, he determined to establish an institution that should embody his ideas, and Pratt Institute—by which its founder will always be best known to the world—came into existence. The charter for this was granted in 1886, and in the autumn of 1887 the buildings were so far completed that class work was begun. As Mr. Pratt incorporated into the institute so much of himself, a brief statement of its aims and scope forms an essential part of a sketch of his life. The institute is founded upon an appreciation of the dignity and value of skilled manual labor, and aims to give its students harmonious and complete development by

the training of eye, hand, and mind. The work of the institute is done in the following departments: The library, covering the general field of literature, though especially strong in art, scientific, and technical books which are of direct use in the various departments; the privileges of the library are free to all residents of Brooklyn. The technical high-school department giving a high-school or academic education, which is made to include drawing and graded courses in manual work. The art department, with classes in free-hand, mechanical, and architectural drawing, design, clay modeling, wood carving, life work; also classes for the training of teachers. The department of domestic science, giving instruction in sewing, dress-making, millinery, hygiene, and home nursing, cooking, laundering, household economy, as well as special instruction for those wishing to become teachers of cooking. The department of commerce, which includes phonography, type-writing, arithmetic, book-keeping, English, Spanish, commercial geography, and commercial law. The department of mechanic arts, offering courses in carpentry, wood turning, pattern making, metal spinning, foundry practice, forging, machine-shop work, plastering, plumbing, painting, electrical construction, steam, strength of materials, etc. The music department, aiming to give to all classes of people, through the medium of the tonic sol-fa notation, ability to sing correctly and understandingly. The technical museum, containing choice collections of pottery, glassware, and textile fabrics, also many collections of objects arranged to show the steps in the process of manufacture from the crude material to the finished product. The Thrift, combining the features of an institution of saving and of a building-and-loan association. Diverse as the work of these departments appears, a single purpose pervades them all—to fit those who avail themselves of the opportunities offered to become self-respecting, honest, thrifty, and intelligent citizens. The institute began its work in the autumn of 1887 with a single class of twelve students; at the time of the founder's death about 3,000 were enrolled, not including the several thousands who were members of the library. In addition to the ample buildings with their splendid equipment, and the grounds, Mr. Pratt gave to the institute a large endowment in the shape of "the Astral," an enormous model tenement house, and other buildings, the income from which is to be used for the benefit of the school, and at his death he left a further endowment of \$2,000,000. Mr. Pratt, although emphatically a public-spirited citizen, declined to hold public office. He was a member of numerous clubs and other organizations, spending, however, only so much time with them as was necessary for a proper discharge of his duties, preferring that home life in which he was especially happy. He was twice married, leaving at his death a widow, two daughters, and six sons. The foundation of his large fortune—estimated at \$20,000,000—was laid while he was young, in the honesty of purpose, frugality, fidelity to trusts, and untiring energy that always characterized him as much as did his kindness and interest in others' welfare. The sentiment that he uttered at the Founder's Day celebration of Pratt Institute, a few months before his death, "The giving that counts is the giving of one's self," well expressed one of the controlling beliefs of his life.

Pratt, Thomas Tart, physician, born in Mobile, Ala., in 1829; died in London, England, Aug. 29, 1891. He received his medical education in New York city, served with the Confederate army during the civil war, and after the war settled in Paris and became assistant to Dr. James Marion Sims, whose daughter he subsequently married. On the death of Dr. Sims he took sole charge of his practice. During the Franco-German War he was first assistant surgeon of the American Ambulance Corps, and for his service to the wounded of both armies he was decorated with the cross of the Legion of Honor by President Thiers and with the Iron Cross by Emperor William. He

was one of the organizers of the Washington Club in Paris, composed chiefly of Americans.

Preston, Thomas Scott, a Roman Catholic prelate, born in Hartford, Conn., July 23, 1824; died in New York city, Nov. 4, 1891. His parents were Episcopalians, and he inherited religious tendencies that were strengthened by education. He was graduated at Washington (now Trinity) College, Hartford, in 1848. He determined to enter the ministry, and, the more fully to devote himself to religious work, decided never to marry. Naturally a ritualist, he adopted the high-church principles of the English Tractarians. In 1843 he entered the Protestant Episcopal Theological Seminary in New York, where he was graduated in 1846, and was ordained deacon. He was first assigned to Trinity Church, and afterward to the Church of the Annunciation in 14th Street, and the Church of the Holy Innocents at West Point. Bishop De Lancey, of Western New York, ordained him priest. He was next called to be assistant rector of St. Luke's Church, New York city, of which Dr. John Murray Forbes was rector, and remained there two years. Doubts as to the legitimate succession of the Episcopal hierarchy led him to the Catholic Church. Wishing to enter the priesthood, he was sent by Archbishop Hughes to St. Joseph's Seminary, Fordham, to complete his studies, and was ordained priest at St. Patrick's Cathedral, New York, Nov. 16, 1850. He acted for a short time as assistant at the cathedral, and then took charge of the mission at Yonkers, where he remained two years. In 1853 the dioceses of Brooklyn and Newark were erected, and Dr. Loughlin was consecrated bishop of the former and Father Bayley of the latter. This left the New York diocese without a chancellor and Archbishop Hughes without a secretary, and Father Preston was recalled from Yonkers to take these places. Dr. Forbes, who had been converted to Catholicism and ordained priest, and was then pastor of St. Ann's, Church, in 1861 returned to the Episcopal Church, and Father Preston was appointed to the vacant rectorship of St. Ann's, which he held until his death. The church, which was then in 8th Street, becoming too small for the wants of the congregation, he purchased a Jewish synagogue in 12th Street, and thither the congregation removed, the new church being consecrated on New Year's day, 1871. On the death of Vicar-General Starrs in 1873, Father Preston had part of the duties of vicar-general added to those of the chancellorship. He was a firm supporter of the parochial-school system, believing that the education of the young should devolve upon the Church, and to exemplify his belief he built a commodious school-house on 11th Street. Seton Hall College, in 1880, conferred upon him the degree of S. T. D., and Pope Leo XIII created him a monsignor, Dec. 13, 1881. Monsignor Preston vigorously opposed the land and labor movement of Henry George in 1886, and declared the principles of the Labor party to be unsound and opposed to Catholic belief. When Dr. Edward McGlynn espoused the cause of Henry George, Monsignor Preston was one of the first to move against that priest, and, by representing Mr. George's doctrines as an attack on the rights of property, he did much to procure the defeat of the latter and the excommunication of Dr. McGlynn. Monsignor Preston was created prothonotary apostolic Aug. 21, 1888, which gave him the title of right reverend. He was an ardent advocate of the temporal power of the Pope, and wrote many controversial and devotional works.

Prime, Edward Dorr Griffin, clergyman, born in Cambridge, N. Y., Nov. 2, 1814; died in New York city, April 7, 1891. He was a son of the Rev. Nathaniel S. Prime, and a brother of the Rev. Samuel Irenæus Prime, and was graduated at Union College in 1832 and at Princeton Theological Seminary in 1838. In 1839-'51 he was pastor of a Presbyterian church in Scotchtown, N. Y.; in 1852 became pastor of the 86th Street Church in New York city; in 1853-'54 was editorially connected with the New York "Ob-

server"; in 1854-'55 was chaplain of the American embassy in Rome, Italy; and subsequently was an editor on the "Observer" till the death of his brother in 1885. He received his degree from Jefferson College, Canonsburg, Pa., in 1857. Besides his editorial and special writings he had published "Around the World" (New York, 1872); "Forty Years in the Turkish Empire," (1875; 6th ed 1888); "Calvinism and Missions," "Civil and Religious Liberty in Turkey," and "Notes, Genealogical, Biographical, and Bibliographical of the Prime Family" (1888).

Quinby, Isaac Ferdinand, soldier and educator, born near Morristown, N. J., Jan. 29, 1821; died in Rochester, N. Y., Sept. 18, 1891. He was graduated at West Point in 1843, standing sixth in his class on the



general score, and first in engineering. Ulysses S. Grant was his classmate. He was appointed brevet 2d lieutenant of artillery, and served in garrison at Fort Mifflin, Pa., in 1843-'44. He was an instructor at West Point in 1845-'47, and in 1847-'48 served with the army in Mexico. He was next in garrison at Fort Monroe and at Fort Adams, R. I., as quartermaster, as adjutant, and as assistant adjutant-general, with the rank of 1st lieutenant. In March, 1852, he resigned his commission, and became Professor of Mathematics in the newly founded University of Rochester, N. Y. At the beginning of the civil war, in the spring of 1861, he accepted the colonelcy of the 13th New York Infantry (a Rochester regiment), and with it passed through Baltimore a little while after the bloody attack on the 6th Massachusetts Regiment in that city. Col. Quinby ordered the muskets to be loaded before the men left the cars, and immediately on alighting the first and last companies were thrown across the street from curb to curb, with the other companies by fours between, and in this order it crossed the city, defying molestation from the mob. The same soldierly precaution might have saved the lives that were lost by the mismanagement of the 6th Massachusetts. Col. Quinby led his regiment gallantly at the battle of Bull Run, where it formed a part of Sherman's brigade; but his resignation two weeks later was one of the results of the demoralization that had lost the battle. He returned to his professorship, and retained it until the spring of 1862, when, on March 17, he was commissioned brigadier-general of volunteers. This appointment is said to have followed from Gen. Grant's inquiry where he was, and why so valuable an officer was allowed to remain uncommissioned. How well, on the other hand, Quinby understood Grant, is shown by an incident that took place between the capture of Fort Henry and that of Fort Donelson. A group of college boys were discuss-

ing the news, when one exclaimed: "That amounts to nothing; he has only driven the Confederates out of Fort Henry." At that moment Prof. Quinby came along, and said: "Don't be impatient, young gentlemen. I know that Grant, he is a determined fellow, and will never let go till he gets them." A few days later came news of the unconditional surrender of Fort Donelson with 14,000 men, which made Grant famous. In April Gen. Quinby was assigned to the command at Columbus, Ky. In October, 1862, he was relieved, to take command of the 7th division of the Army of the Tennessee. The division was sent to take part in the movement to turn the Confederate right flank at Vicksburg by Yazoo pass, the Coldwater, Tallahatchie, and Yazoo rivers. Amid great difficulties Gen. Quinby pushed on to Fort Pemberton, where he arrived on March 23. Finding no ground suitable for camping or moving a large body of troops, and the fire of the small gunboats being ineffectual, he conceived the idea of going around to the east side of Fort Pemberton, crossing Yallahusha river on a pontoon bridge, cutting the communications of the fort and compelling its surrender; but he also constructed works for a direct attack, and sent back to Helena for heavy guns. The boat that carried them brought orders from Gen. Grant to abandon the movement by Yazoo pass, and Gen. Quinby withdrew his force from before Fort Pemberton on April 5. The fatigues and anxieties of this expedition in a malarial region brought on a severe illness, and he was ordered home on sick-leave May 1, 1863. But learning, a few days after reaching home, the progress of Grant's movement to the rear of Vicksburg, he hastened back, assuming command of his division on the 17th, and taking part in the assault of the 19th, and the subsequent movements. On June 5 illness again rendered him unfit for duty in the field, and he went to the North under Grant's orders, remaining in Rochester until July 1. He then commanded the rendezvous at Elmira till Dec. 31, 1863, when, convinced that he would not again be able to go to the front, he resigned his commission and resumed his chair in the university. In May, 1869, he was appointed United States marshal for the Northern District of New York, and he held that office during Grant's two presidential terms, holding his professorship also till September, 1884. In 1886-'90 he was city surveyor of Rochester. He was a trustee of the Soldiers' Home at Bath, N. Y., and vice-president of the board from the foundation of the institution, in 1879, till his resignation, in 1886. In addition to his official duties, he was frequently employed as a consulting engineer. Gen. Quinby married Elizabeth G. Gardner, daughter of Gen. John L. Gardner, U. S. A., and she and nine children survive him. He revised and rewrote several of the works in the Robinson course of mathematics, and the treatise on the calculus is wholly his.

Redpath, James, journalist, born in Berwick-on-Tweed, England, Aug. 14, 1823; died in New York city, Feb. 10, 1891. He received a common-school education, removed with his parents to Detroit, Mich., in 1848, and became connected with the New York "Tribune" in 1852. He soon imbibed the spirit of the anti-slavery agitation, and in 1855 went to Kansas, where he took part in the Free-soil movement, and corresponded regularly with several Northern newspapers. After two years' residence in Kansas he determined to make a personal investigation of slavery in the Southern States, and in doing so he associated as closely as possible with the actual daily life of the slaves. This tour made him more than ever an abolitionist, and prompted him to join with others in organizing a scheme for the colonization of slaves in Hayti. He made two trips to Hayti to facilitate this object, and was appointed by the Haytian Government its emigration agent in the United States, and also its consul at Philadelphia. The breaking out of the civil war prevented the consummation of his purpose. He was one of the earliest war correspondents at the front, and remained in the field, principally

with the armies of Gen. Sherman and Thomas, till the close of the war. He then, under official appointment, settled in Charleston, S. C., as superintendent of education, and reorganized the educational system of the city and established schools for colored youth. In 1868 he removed to Boston and established the Lyceum Bureau, through the agency of which he introduced several well-known lecturers and readers to the American public. After several successful seasons he sold his business to Major J. B. Pond, by whom it is still continued. In 1872 he made a tour of the South in advocacy of the re-election of President Grant, and in 1876 became secretary of the Teller Senate Committee on Investigation of Alleged Election Frauds in Louisiana, Mississippi, and other Southern States. In 1877 he established a newspaper syndicate in Washington, which proved a failure, after which he resumed editorial work on the New York "Tribune," by which he was sent to Ireland to report on the famine of 1879-'80. While in Ireland he became strongly attached to the Land League party and to the principle of home rule, and after a short visit to the United States he returned to aid the promoters of the Irish movement. His efforts with voice and pen aided in swelling materially the famine relief fund collected in the United States. Soon after his return he established a weekly newspaper in New York city, which lived two years. He then was employed on the "North American Review," and became an advocate of Henry George's land theories. In 1887 he had a stroke of paralysis, but he continued his literary work till the accident that caused his death. He made another trip to Ireland in 1888, and afterward assisted Jefferson Davis in preparing his history of the Southern Confederacy, and Mrs. Davis in compiling the memoirs of her husband. Mr. Redpath published "Hand-book to Kansas" (New York, 1859); "The Roving Editor, or Talks with Slaves in the Southern States" (1859); "Echoes of Harper's Ferry" (Boston, 1860); "Southern Notes" (1860); "Guide to Hayti" (1860); "The John Brown Invasion" (1860); "The Public Life of Capt. John Brown" (1860); "John Brown, the Hero" (London, 1862); and "Talks about Ireland" (New York, 1881).

Rice, Harvey, lawyer, born in Conway, Mass., June 11, 1800; died in Cleveland, Ohio, Nov. 7, 1891. He was graduated at Williams College in 1824; removed to Cleveland, and opened a classical school in the old St. Clair Academy the same year; studied law, and was admitted to the bar in 1826; and purchased the newspaper now known as the "Cleveland Plain-dealer" in 1828. After spending two years in editorial work, he was elected to the Ohio Assembly, and soon afterward he was appointed agent for the sale of the Western Reserve school lands, of 50,000 acres, in the Virginia military district. In three years he sold all the lands and turned nearly \$150,000 into the State treasury. In 1833 he was appointed clerk of the Common Pleas and the Supreme Courts in Cleveland, and he held the office for seven years; in 1834 and 1836 he was an unsuccessful Democratic candidate for Congress; in 1851 he was elected to the State Senate, where he advocated the reorganization of the common-school system of Ohio and the establishment of school libraries; and in 1867 he planned and erected at his own expense a beautiful marble monument in Mission Park, Williamstown, Mass., commemorative of American foreign missions. He published "Mount Vernon, and other Poems" (1858; 4th edition, 1864); "Nature and Culture" (Boston, 1875); "Pioneers of the Western Reserve" (1882); "Select Poems" (1885); and "Sketches of Western Life" (1888).

Richardson, Charles A., editor, born in Franklin, Mass., Oct. 9, 1829; died in Boston, Mass., Jan. 18, 1891. He was educated at the State Normal School at Westfield, and, after teaching for several years, became managing editor of the "Congregationalist" in 1856, and held the office till his death. He was also Vice-President of the Congregational Club, a director of the Congregational Association, and a

member of various committees engaged in religious and missionary work.

Ritter, Frederic Louis, musical composer, born in Strasburg, Germany, in 1834; died in Antwerp, Germany, July 6, 1891. He was descended from a Spanish family named Cabellero; first studied music with Hauser and Hans Schletterer, then with George Kastner, in Paris, and afterward with masters in Germany; and in 1852 became Professor of Music in the Protestant Seminary of Fenestrange, Lorraine. Thence he went to Bordeaux, where he conducted a series of concerts. In 1856 he removed to Cincinnati, where he organized the Cecilia (choral) and Philharmonic (orchestral) societies, produced works new to this country, and did much to promote the cause of music in the West. He became conductor of the Sacred Harmonic Society and of the Arion Singing Society in New York in 1861, and organized and conducted at Steinway Hall the first purely musical concert held in New York city, in 1867. He was appointed director of music at Vassar College in 1867, and held the office till his death, resigning his offices in New York city and removing to Poughkeepsie in 1874. In 1878 he received the degree of Mus. Doc. from the University of the City of New York. His publications and compositions include: "A History of Music in the Form of Lectures" (1870-'74); "Music in England" (1883); "Music in America" (1883); "Manual of Musical History from the Epoch of Ancient Greece to our Present Time" (1886); "Musical Dictation" (1888); "Practical Method for the Instruction of Chorus Classes"; "The Realm of Tones," edited (1883); "The Woman's College Hymnal," compiled with the Rev. J. Ryland Kendrick; and sacred music compositions, the 4th Psalm, the 23d and 95th Psalms for female voices, "O Salutaris," and an "Ave Maria." He also composed the music for more than 100 German songs; many hymns and songs for children; and instrumental works, as symphonies, overtures, septet for flute, horn, and string quintet, string quartet, and music for the piano and organ.

Robinson, Lucius, lawyer, born in Windham, Greene County, N. Y., Nov. 4, 1810; died in Elmira, N. Y., March 23, 1891. He was a lineal descendant of John Robinson, the celebrated Puritan clergyman; was educated at Delaware Academy, Delhi, N. Y.; and was admitted to the bar in 1832. He settled in Catskill to practice, was district attorney of Greene County in 1837-'40, when he removed to Elmira and resumed practice. He was appointed a master in chancery in 1843, and served continuously till the abolition of that court in 1847. Almost immediately after retiring from this court he received the Democratic nomination for judge of the Superior Court, but was defeated. He was employed chiefly with referee cases till 1855, and then retired to a farm in Chemung County for rest. In 1859 he was elected to the State Assembly as an independent candidate, by a combination of Republicans and Democrats, and he was re-elected in the following year. In 1861 he was defeated as candidate for Speaker, but the same year he was elected Comptroller of the State by the largest majority that had ever been given a candidate for a State office in New York (108,201). In the convention of 1863 he was a candidate for renomination, but the party managers chose another, and when this nominee declined, Mr. Robinson was nominated by the State committee, and was again elected by a majority greater than that of the general ticket. He was a candidate for a third election in 1865, but his conservative administration and his opposition to refunding plans caused his defeat. During the civil war period he had acted with, and been the candidate of, the Republican party, but at its close he returned to the Democratic party, and as its candidate for Comptroller was again defeated. In 1870 he was defeated for Congress; in 1875 was re-elected Comptroller; and in 1876 he was elected Governor. Tammany Hall opposed his candidacy for re-election in 1879, and he was defeated. During his administration as Governor he was vigilant in regard to public ex-

penditures, freely used the veto power against special legislation, and recognized and promoted the doctrine of home rule for the large cities. His personal integrity was beyond question.

Robinson, Moncure, civil engineer, born in Richmond, Va., in 1802; died in Philadelphia, Pa., Nov. 10, 1891. He was educated at William and Mary College, and began his professional work when sixteen years old in connection with a topographical survey of the State from Richmond to the Ohio river. While engaged in this work he made detailed reports on the coal fields of West Virginia, and made an independent expedition into the northwestern part of the State. In 1821 he critically examined the Erie Canal, and the same year was asked to superintend the extension of the James River Canal to Covington. But he had become convinced of the general superiority of railroads over canals, and urged the building of a railroad instead, but as his views were not entertained he declined the undertaking. In 1823 he went to Europe; studied civil engineering and important public works in France, England, Wales, and Holland, and, becoming acquainted with George Stephenson, then building the Liverpool and Manchester Railroad, received ample confirmation of his own views on the relative merits of railroads and canals. He returned home in 1827, and in the following year began surveys for the Pottsville and Danville Railroad, designed to develop the anthracite coal fields of Pennsylvania. Afterward he made a survey and plans for the Alleghany Portage Railroad, which, in competition with the plans of other engineers, were finally adopted. His plan involved a tunnel one mile long and the transportation of loaded boats from the canal at Hollidaysburg by rail over the Alleghany mountain, and their launching again into the canal basin at Johnstown, to proceed thence to Pittsburgh. In 1830 he built a thirteen-mile railroad in Virginia to reach the coal fields, the novelty of which consisted of an inclined plane or gravity road, now a common affair. In the following year he was engaged in the construction of the Petersburg and Roanoke and the Richmond and Petersburg railroads, and for the latter he built the long bridge over James river at Richmond. Next he undertook the construction of the Richmond and Fredericksburg and the Winchester and Potomac railroads. In 1834 he began the principal work of his life, the building of the Philadelphia and Reading Railroad. In this work he was not only successful as an engineer but also as a financier, for on him was placed the duty of securing in England a loan with which to complete the road. Subsequently he invented and built the Gowan and Marx engine, and for the Federal Government selected the Wallabout basin as the best site in New York harbor for a great dry-dock. He retired from active field work in 1847, but till the time of his death he was frequently consulted on large engineering works.

Rouckendorf, William, naval officer, born in Philadelphia, Pa., Nov. 9, 1812; died in New York city, Nov. 27, 1891. He was appointed a midshipman in the United States navy, Feb. 17, 1832; was promoted passed midshipman, June 23, 1838; lieutenant, June 28, 1843; commander, June 29, 1861; captain, Sept. 27, 1866; commodore, Feb. 12, 1874; and was retired Nov. 9, 1874. During his naval career he was on sea service twenty-two years eight months; on shore or other duty, ten years ten months; and was unemployed twenty-five years four months. In 1845 he was bearer of dispatches from the Navy Department to the commander-in-chief of the Pacific squadron, with which he served through the Mexican War; in 1847 was on the "Savannah" at the capture of Monterey, and in 1859 commanded the steamer "M. W. Chapin" in the Paraguay expedition. In the civil war he took part in the fight with the "Merrimac" as commander of the "San Jacinto" in the attack on Sewell's Point, and in the capture of Norfolk; was employed in searching for privateers in 1863; and commanded the "Monsadnock" in the James river operations, and made a cruise in search of the

"Stonewall" in 1864. In 1870-'72 he was in charge of the ironworks at New Orleans.

Royce, Homer Elihu, jurist, born in Berkshire, Vt., June 14, 1820; died in St. Albans, Vt., April 24, 1891. He received an academical education; was admitted to the bar in 1844; was prosecuting attorney for the State in 1846-'47; and was State Senator in 1849-'51. In 1856 and 1858 he was elected to Congress, where he served as a member of the Committee on Foreign Affairs; and in 1870 he was chosen an associate justice of the Supreme Court of Vermont. He held this office till 1882, when he was appointed chief justice, and served as such till impaired health caused him to resign in 1890.

Safford, Mary Jane, physician, born in Vermont, about 1840; died in Tarpon Springs, Fla., Dec. 8, 1891. For several years she resided with her brother in Cairo, Ill., where she established a free school and taught till the beginning of the civil war. Through personal acquaintance with President Lincoln and Gen. Grant she secured permission to go to the seat of war as soon as hostilities began, and was credited with being the first woman to administer relief to the wounded on the field of battle in the war. Before its close her strength gave way and she went to Europe for rest. On her return she spent three years studying medicine in New York city, and was graduated at the College and Hospital for Women. Receiving permission to enter the medical department of the University of Vienna—the first ever granted to a woman—she spent nearly three years studying there and in various hospitals in Europe. She then settled in Chicago to practice, but soon removed to Boston. In 1873, on the establishment of the Boston University School of Medicine, she was appointed a Professor of Diseases of Women, and held the chair till 1888, when she settled in Tarpon Springs.

St. John, Charles, merchant, born in Mount Hope, Orange County, N. Y., Oct. 8, 1818; died in Port Jervis, N. Y., July 6, 1891. He received a common-school education, engaged in lumbering on Delaware river, subsequently carried on a general mercantile business, and afterward established a lumbering plant on Susquehanna river near Williamsport, Pa., and became the second largest individual operator in lumber in the world. In 1870 and 1872 he was elected to Congress from the 12th New York District as a Republican, and he served on the committees on Public Lands and on Expenditures in the State Department. In 1880 he was a presidential elector.

Sands, Samuel, publisher, born in Annapolis, Md., in 1800; died in Baltimore, Md., July 28, 1891. In 1811 he was apprenticed to the printer's trade, and in 1814, while working in the office of the Baltimore "American," he put into type, fresh from the author's hands, the song of "The Star-spangled Banner." When sixteen years old he was foreman of the "American's" composing-room, and he remained there till he went into business for himself as publisher of "The American Farmer" in 1819, one of the first agricultural papers in the United States. He also established "The Morning Chronicle," a daily newspaper; in 1836 published "The Freeman's Banner," in which he advocated the election to the presidency of William Henry Harrison; in 1869 established "The Real Estate Register," and in 1872 "The Rural Register." He had been a staunch Whig, a war Democrat, and a zealous Republican. With his son, Samuel B. Sands, he remained an editor and publisher of "The American Farmer" till the time of his death.

Sanford, Henry Shelton, diplomatist, born in Woodbury, Conn., June 15, 1823; died in Healing Springs, Va., May 21, 1891. He received a partial collegiate education in the United States, and studied at Heidelberg University; first entered the United States diplomatic service in 1847 as an *attaché* to the legation at St. Petersburg, under Ralph J. Ingersoll; was acting secretary of legation in 1848 at Frankfurt under Andrew J. Donelson, and was secretary of legation at Paris from 1849 till 1854. In 1861 he was ap-

pointed minister to Belgium, where he remained eight years, became an intimate acquaintance of the King, and rendered such important service to the Federal Government during the civil war that Secretary Seward pronounced him "the minister of the United States in Europe." President Johnson nominated him for a second term in Belgium, President Grant for the Spanish mission, and President Hayes renewed the nomination for Belgium, but the Senate rejected him each time. He negotiated the first postal convention with France, and the celebrated Scheldt treaty of commerce and navigation; founded the city of Sanford, Fla., in 1870; was United States commissioner on the Congo River Colony in 1883, and delegate to the International Congo Conference in 1885; and was a delegate to the Antislavery Conference at Brussels in 1889.

Sawyer, Charles Carroll, song writer, born in Mystic, Conn., in 1833; died in Brooklyn, N. Y., Oct. 3, 1891. He accompanied his parents to New York city in boyhood; began writing sonnets when twelve years old, and during the civil war composed many songs, which, from the absence of sectional sentiments, became very popular among the soldiers of both armies. His best known songs are "When this Cruel War is over," "Who will care for Mother now?" and "Mother would comfort me."

Sawyer, Frederick Adolphus, Senator, born in Bolton, Mass., Dec. 12, 1822; died in Sewanee, Tenn., July 31, 1891. He was graduated at Harvard College in 1844, taught for several years in Maine, New Hampshire, and Massachusetts, and in 1859 took charge of the Normal School in Charleston, S. C. In 1864 he and his family were allowed to pass through the lines and return North, and the same year he took the stump in New England in advocacy of President Lincoln's re-election. He returned to Charleston in 1865, and became active in advancing reconstruction measures. In May of that year he was appointed collector of internal revenue in the 2d South Carolina District. He was elected to the State Constitutional Convention under the reconstruction acts of Congress, but declined to serve, and was elected United States Senator in 1868. In the Senate he was a member of the committees on Private Land Claims, Education, Pensions, and on Appropriations. At the close of his term, in 1873, he was appointed assistant secretary of the treasury, and he held the office about a year. Soon after the appointment of Gen. Benjamin H. Brewster to be Secretary of the Treasury, Mr. Sawyer and other Treasury officials were charged with having procured the payment of a fraudulent cotton claim while employed in the department. The officials were convicted and sent to jail; but on a second trial it was shown that Mr. Sawyer had received none of the money, and he was acquitted.

Sawyer, Lorenzo, jurist, born in Jefferson County, N. Y., in 1820; died in San Francisco, Cal., Sept. 7, 1891. He was brought up on a farm till sixteen years old, taught school, and attended for a short time the Western Reserve College. Studied law, was admitted to the bar, and in 1850 went to California as a member of the "Badger Train." He practiced at different times in Sacramento, Nevada City, and San Francisco, was elected city attorney of the latter city in 1854, and lacked only six votes to secure the nomination for judge of the Supreme Court in 1856. In 1862 he was appointed judge of the 12th Judicial District of California to fill a vacancy, and after serving five months was elected for a full term, having the support of both parties. Subsequently, on the reorganization of the State courts, he was again elected for a full term, in the two last years of which he was chief justice. In 1869 he was appointed judge of the United States District Court for the Northern District of California, and he held the office till his death. While a State judge he attracted wide attention by overruling a decision denying Chinamen the right to testify in courts, on the ground that such prohibition conflicted with the fourteenth amendment to the Federal Constitution.

Schultz, Jackson S., manufacturer, born in Hyde Park, N. Y., Nov. 9, 1815; died in New York city, March 1, 1891. He was the son of a tanner, with whom he learned the trade, and early in life became a clerk in the leather house of Smith, Schultz & Co., New York city, of which his father was a partner. In 1838 this firm was dissolved; and after young Schultz had conducted the business alone for a year, he organized the firm of Young & Schultz, which continued in that form till 1854, when a third member was admitted, and the name became Young, Schultz & Co. Further changes were made in 1857 and 1867, the firm becoming Schultz, Southwick & Co in the latter year and remaining so till 1884, when Mr. Schultz retired, and the firm of Schultz, Innes & Co. was formed. Mr. Schultz always took a keen interest in the public affairs of the city, but it was in the movement that resulted in the exposure of the Tweed ring and the arrest and successful prosecution of William M. Tweed that he particularly earned the thanks of the community. He was a member of the Committee of Seventy which was appointed in September, 1871, and which, after the exposure, reported a reform charter for the city; and, later, he was conspicuous in the agitation of New York merchants against the moiety system of the Federal Government enforced against the importers. In 1873 he was appointed United States Commissioner to the World's Exhibition in Vienna. He discovered or invented many improvements in the art of tanning, and he also published a work on the history and art of that industry.

Scotfield, Glenni William, jurist, born in Chautauqua County, N. Y., March 11, 1817; died in Warren, Pa., Aug. 30, 1891. He was graduated at Hamilton College in 1840, and was admitted to the bar in Warren, Pa., in 1843. In 1850 and 1851 he was a member of the Pennsylvania Assembly, in 1857-'59 was in the State Senate, and in 1861 was appointed president judge of the 18th Judicial District of the State. He was elected to Congress from the 19th Pennsylvania District as a Republican in 1862, and was re-elected five consecutive times. There he was chairman of the standing Committee on Naval Affairs and of the select committee to investigate the legislative troubles in Louisiana. In the latter part of his congressional service his name was unfavorably connected with the Crédit Mobilier scandal. In March, 1878, he was appointed Register of the Treasury, and he held the office till 1881, when he was appointed a judge of the United States Court of Claims. He retired from his last office a few weeks before his death.

Scott, William Lawrence, capitalist, born in Washington, D. C., July 2, 1828; died in Newport, R. I., Sept. 19, 1891. He received a common-school education, and when twelve years old was appointed a page in the national House of Representatives, where he served for six years. Near the close of his last term he attracted the attention of Representative Reed, then engaged in the lake trade at Erie, Pa., who gave him a place as clerk in his shipping office. In 1850 he engaged in the coal and shipping business on his own account, soon afterward bought and ran several vessels on the Great Lakes, and subsequently, becoming interested in coal mining, iron manufacturing, and railroad operations, attained large wealth. At one time he was president or director of railroad companies owning or controlling more than 22,000 miles of completed road, and was the confidential manager of many enterprises in which Samuel J. Tilden was interested. At the beginning of the civil war he organized and equipped, at an expense of \$30,000, the Scott Battery. In 1868 he was a delegate to the National Democratic Convention in New York; in 1880, delegate-at-large from Pennsylvania to the convention in Cincinnati; in 1876-'84 was a member of the Democratic National Committee; in 1866 and 1871 was Mayor of Erie; and in 1884 was elected a member of the House of Representatives, in which he had served as a page forty-four years previously. He was re-elected from the 27th Pennsylvania Dis-

trict as a Democrat in 1886, and in his second term served as a member of the Committees on Ways and Means and on Expenditures in the Navy Department. Mr. Scott bought many noted horses, and established a great breeding farm on the old Tazewell estate in Virginia.

Scoville, Jonathan, manufacturer, born in Salisbury, Conn., July 14, 1830; died in New York city, March 4, 1891. He was educated in the public schools and in Yale Scientific School, established a blast furnace in Oneida County, N. Y., in 1850, and car-wheel factories in Toronto, Canada, and Buffalo, N. Y., in 1860, and with a brother made the Buffalo factory one of the largest of its kind in the country. In 1881 he was elected to Congress as a Democrat from the Erie District to fill a vacancy, and in the following year he was elected for a full term. His only other public office was that of Mayor of Buffalo, to which he was elected in 1884. Mr. Scoville bequeathed \$25,000 to the Buffalo General Hospital for the establishment of a training school for nurses, \$5,000 each to the Buffalo Orphan Asylum, Buffalo Fine Arts Academy, Buffalo Historical Society, the Home of the Friendless, and St. Vincent's Female Asylum, \$3,000 to the Roman Catholic Church Society in Lakeview, Ontario, the interest of \$5,000 in perpetuity to St. John's Episcopal Society of Salisbury, Conn., and \$500 per annum to the Methodist Episcopal Union Chapel of Chapinville.

Searles, Mary Frances Sherwood, capitalist, born in New York city about 1821; died in Methuen, Mass., July 25, 1891. She was one of several daughters of William Sherwood, removed with the family to Great Barrington, Mass., in early life; married Mark Hopkins in 1848, and accompanied him to California in the following year. They settled in Sacramento, and soon afterward Mr. Hopkins formed a partnership with Collis P. Huntington, and the firm began dealing in the various commodities needed by the miners. Subsequently the firm united with another, composed of Leland Stanford and Charles Crocker, and the four men began building a railroad from Sacramento to Placerville. They then proposed the construction of a railroad across the Rocky mountains, and, when Congress passed the bill giving a subsidy of \$48,000 for every mile in the mountainous country and \$30,000 for every mile on the plains they organized the Central Pacific Railroad Company and divided the four principal offices between themselves, Mr. Hopkins taking that of treasurer. The four men built the road in about five years, and it was supposed they each cleared nearly \$50,000,000 by the transaction. Mr. and Mrs. Hopkins then removed to San Francisco, where they built a residence on Nob Hill that cost \$1,250,000. Mr. Hopkins died in April, 1878, leaving an estate variously estimated at from \$30,000,000 to \$60,000,000. His widow then left San Francisco, and for several years lived alternately in New York city, Paris, London, and Great Barrington, building a costly residence at each place, as well as in Methuen and on Block Island. About 1885 she determined to erect at Great Barrington a residence that should surpass in size and beauty her Nob Hill estate, and cost about \$5,000,000. Edward F. Searles, who had been engaged to go to San Francisco to redecorate the mansion there, executed his commission so satisfactorily that on its completion he was placed in charge of her contemplated palace in Great Barrington. While prosecuting this work he became architect, superintendent, financial manager, and confidential adviser, and on Nov. 9, 1887, he married his wealthy employer. Excepting occasional trips to Europe and to Mr. Searles's home in Methuen, they lived in the Kellogg Terrace palace at Great Barrington till her fatal illness. Mrs. Searles had no children, but many years ago had adopted a youth, who took the name of Timothy Hopkins. She bequeathed all her property to her husband, and after a sensational hearing in the courts all opposition suddenly ceased and by a compromise Mr. Hopkins received about \$3,000,000.

Seton, Catharine, philanthropist, born in New York city, June 28, 1800; died there, April 3, 1891. She was the only surviving daughter of Mrs. Elizabeth Seton, founder of the Roman Catholic order of Sisters of Charity in the United States, and after the death of her mother, in 1821, she was a member of the family of Gen. Harper, of Baltimore, till she became a sister. Returning to New York city, she applied herself almost exclusively to the cure and instruction of the poor and to befriending prisoners. For twenty-five years she was a constant visitor to the New York city prison (the Tombs). At the time of her death she was the oldest member of the Order of Mercy, of which she was one of the first members.

Seward, Sara Cornelia, physician, born in Florida, N. Y., June 8, 1833; died in Allahabad, India, June 12, 1891. She was the daughter of George W. Seward, youngest brother of William H. Seward, and a sister of the late Rev. S. S. Seward, D. D., and of George F. Seward, ex-United States minister to China. She was graduated at Miss Willard's Troy Female Seminary, and at the Woman's Medical College in Philadelphia in 1860, and in 1861-'65 was in China with her brother. While she was studying medicine Sir William Muir, Governor of the Northwestern Provinces of India, suggested to the Zenana Missionary Society the desirability of having women physicians to practice among the women of India, whom male practitioners were never allowed to see. In response to an appeal from the society, Dr. Seward volunteered to go to India, and left New York in December, 1871. She established herself at Allahabad, and labored there with great success till her death, at first under the jurisdiction of the British Government, but for many years under that of the Presbyterian Board of Foreign Missions of the United States. She had two dispensaries in the city, both of which were visited every day and showed an attendance of from forty to eighty patients, and also a large practice in private houses and in missionary families.

Seymour, Truman, military officer, born in Burlington, Vt., Sept. 25, 1824; died in Florence, Italy, Oct. 30, 1891. He was graduated at the United States Military Academy and appointed brevet 2d lieutenant 1st Artillery, July 1, 1846; was promoted 2d lieutenant March 3, and 1st lieutenant Aug. 26, 1847; captain, Nov. 22, 1860; was transferred to the 5th Artillery, May 14, 1861; promoted major, Aug. 13, 1866; and was retired, Nov. 1, 1876. In the volunteer army he was commissioned brigadier-general, April 26, 1862; brevetted major-general, March 13, 1865; and was mustered out of the service, Aug. 24 following. During his military career he was brevetted 1st lieutenant, April 18, 1847, for gallantry at Cerro Gordo; captain, Aug. 20 following, for Contreras and Churubusco; major, April 14, 1861, for the defense of Fort Sumter; lieutenant-colonel, Sept. 14, and colonel, Sept. 17, 1862, for South Mountain and Antietam; and brigadier-general and major-general, March 13, 1865, for Petersburg, for services during the war, and for "ability and energy in handling his division and for gallantry and valuable services in action." In his long service he distinguished himself in the Mexican, the Seminole, and the civil wars. He was a member of Major Anderson's staff in the defense of Fort Sumter. Among his brilliant feats in the civil war were his leading in the unsuccessful assault on Fort Wagner, where he was severely wounded, and his three hours' battle with the Confederates under Gen. Joseph E. Johnston, near Olustee, Fla., whence he was forced to retire to Jacksonville. He was taken prisoner in the battle of the Wilderness, May 6, 1864, and, by order of Gen. Samuel Jones, was placed in the line of fire of the Federal batteries on Morris Island. After his release, on Aug. 9, he commanded a division in the Shenandoah valley and Richmond campaigns, and was conspicuous in the siege of and final attack on Petersburg. After the war he commanded forts in Florida, Fort Warren, Mass., and Fort Preble, Me., till his retirement. Since his retirement he had lived in Europe, most of the time in Florence.

Sibley, Henry Hastings, pioneer, born in Detroit, Mich., Feb. 29, 1811; died in St. Paul, Minn., Feb. 18, 1891. He was graduated at Detroit Academy, took a special course in Greek and Latin, and read law, but in 1829 became clerk to the sutler at Sault Ste. Marie. Soon afterward he took a local agency of John Jacob Astor's fur company, and, after being in 1832-'34 a purchasing agent, he was given an interest in the company, and took charge of its business in the territory north of Lake Pepin extending to the British line, and west to the head waters of the tributaries of Missouri river. In 1834 he reached the mouth of Minnesota river, on a trip for the company, and, establishing his headquarters at St. Peter's (now Mendota), built the first stone house within the present limits of Minnesota. Two years afterward he was appointed by Gov. Chambers, of Iowa, a justice of the peace. In 1848 he was elected a delegate to Congress from Wisconsin Territory, and there secured the passage of a bill for the creation of Minnesota Territory. He was re-elected to Congress for two terms; in 1857 took part in the constitutional convention and was elected to the Territorial Legislature; and on the admission of Minnesota as a State, in 1858, he was elected its first Governor, as a Democrat. In 1862, at the time of the Sioux Indian outbreak, he organized and commanded the troops raised for the protection of the frontier settlers, and was commissioned a brigadier-general. During this campaign he took about 2,000 Indian prisoners, tried more than 400 of them by court-martial, and on Sept. 29, 1862, executed thirty-eight at one time, only President Lincoln's direct orders preventing the execution of many more. Gen. Sibley was promoted major-general, Nov. 29, 1865; was relieved of his command in Minnesota in August, 1866; and was detailed as a member of a commission to negotiate treaties with the Sioux and other hostiles along the upper Missouri river. In 1871 he served another term in the Legislature, and afterward lived quietly in St. Paul. He was a regent of the State University, President of the State Normal School Board, and a member of the United States Board of Indian Commissioners.

Smith, John Gregory, lawyer, born in St. Albans, Vt., July 22, 1818; died there, Nov. 6, 1891. He was graduated at the University of Vermont in 1842, and at Yale Law School soon afterward, and began practicing with his father before the Franklin County bar in his native State. In 1849 he became counsel for the Vermont Central (projected by his father) and the Vermont and Canadian railroads; in 1858-'73 he was one of the receivers of the former road; in 1866-'72 he was President of the Northern Pacific Railroad; and since 1873 he had been President of the reorganized Vermont Central Road. He was a Republican, and had held many public offices. In 1859 and 1860 he was a State Senator; in 1861 and 1862 he was an assemblyman; in 1863 and 1864 he was Governor of Vermont; and in 1872, 1880, and 1884 he was delegate-at-large to the National Republican Convention and chairman of the delegation. He was also several times President of the State Republican Convention, and several times declined nomination and appointment to the United States Senate. Gov. Smith bequeathed \$10,000 to his native city for a public library, \$5,000 for a soldiers' monument, and \$3,000 to the 1st Congregational Church of St. Albans.

Smith, Thomas Ludington, physician, born in Orange, N. J., Aug. 13, 1800; died in Brooklyn, N. Y., Aug. 13, 1891. He was graduated at the College of Physicians and Surgeons in New York city in 1822, and at the Eye and Ear Infirmary in 1823; established himself in practice in New York in 1824; and was appointed a surgeon's mate in the United States navy in March, 1828. In 1830 he accompanied the frigate "Hudson" to Brazil; in 1831-'34 was on duty on the receiving ship "Franklin"; in 1837 was promoted surgeon; in 1838 was attached to the "Macedonian" in the West India squadron; in 1843 to the "Congress" in the Mediterranean; in 1845-'46 to the "Pennsylvania"; and in 1847-'49 to the Brooklyn

Navy Yard. He was fleet-surgeon of Commodore Perry's expedition to Japan in 1854, and, after serving at the Brooklyn Navy Yard and on the "Constellation" in the African squadron, he had charge of the Naval Hospital at New York in 1861-'65. After the war he was on leave orders for several years, and in 1871 he was appointed medical director, with the rank of commodore, and was retired.

Spear, Samuel T., clergyman, born in Ballston Spa, N. Y., March 4, 1812; died in Brooklyn, N. Y., April 1, 1891. He was graduated at the College of Physicians and Surgeons in New York city, had his attention drawn to the ministry soon afterward, studied theology in Troy, N. Y., and was ordained in the Presbyterian Church, in 1835. He was first settled over the 2d Presbyterian Church in Lansingburg, N. Y. In 1843 he was called to a church in Brooklyn, N. Y., and served it uninterruptedly for twenty-seven years, resigning in 1870 to accept an editorial place on "The Independent." Excepting occasional preaching, he passed the remainder of his life in editorial and other literary work. His publications included books on "Family Power," "Bible Heroes," "Church and State," and "The Federal Judiciary." Dr. Spear defended the Rev. T. De Witt Talmage in the trial before the Brooklyn Presbytery.

Spinola, Francis B., legislator, born in Stony Brook, Long Island, N. Y., March 19, 1821; died in Washington, D. C., April 14, 1891. He received an academic education, was admitted to the bar in New York city in 1844, and served five years as alderman, six years as assemblyman, and four years as State Senator. He was a delegate to the National Democratic Convention in Charleston in 1860. In the early part of the civil war he recruited and organized the "Empire" brigade of four regiments, which he accompanied to the front, and on Oct. 2, 1862, he was commissioned brigadier-general of volunteers. He served till the close of the war, and in leading a charge at Wapping Heights, Va., he was twice wounded. Returning to New York city, he engaged in the banking and insurance business and resumed political life. In 1886 and 1888 he was elected to Congress from the 10th New York District, as a Democrat, where he served as a member of the committees on Military Affairs and on War Claims.

Staples, Hamilton Barclay, jurist, born in Mendon, Mass., Feb. 14, 1829; died in Worcester, Mass., Aug. 2, 1891. He was graduated at Brown University in 1851, studied law with Chief-Justice Ames, of Rhode Island, and Peter C. Bacon, of Worcester, and was admitted to the bar in 1854. He began practicing in Milford with Gen. A. P. Underwood, and in 1869 returned to Worcester. Soon afterward he was elected district-attorney for the Middle District of Massachusetts, and he held the office for eight years. He was appointed a judge of the Superior Court of Massachusetts, in 1881, and held that office till his death.

Starr, Samuel H., military officer, born in Leyden, N. Y., July 31, 1810; died in Philadelphia, Pa., Nov. 25, 1891. He entered the United States army as a private in the 4th Artillery, Oct. 27, 1832, was promoted corporal and sergeant within two years, and, after serving in the Creek and Seminole wars, was discharged from the service honorably, Oct. 26, 1837. At the declaration of war with Mexico he re-entered the service as a private in the battalion of engineers, was soon promoted corporal and sergeant, and for bravery in action was brevetted 2d lieutenant 2d Dragoons, June 28, 1848. In the following month he was advanced to the full rank. On Nov. 10, 1851, he was promoted 1st lieutenant; June 14, 1853, captain; April 25, 1863, major of the 6th Cavalry; and Dec. 15, 1870, was retired with the rank of colonel. In the civil war he was commissioned colonel of the 5th New Jersey Infantry, Aug. 24, 1861; served with the Army of the Potomac and with Sheridan in the Shenandoah valley till 1864, excepting a short period of mustering duty in Ohio; and was afterward a special inspector of cavalry in the armies of the Potomac and the James. He was brevetted major, lieutenant-colonel,

and colonel, for services at Williamsburg and Upperville, Va., and in the Gettysburg campaign.

Stewart, George W., inventor, born in Atlanta, Ga., in 1843; died in New York city, Dec. 9, 1891. He had invented several useful contrivances in the line of agricultural implements, and had come to New York to interest capitalists in his last invention—the aquaphone—an apparatus for signaling between ships at sea. After spending a day in explaining his invention to a company of interested capitalists, he returned to his hotel and fell dead.

Storer, David Humphreys, educator, born in Portland, Me., in 1804; died in Boston, Mass., Sept. 10, 1891. He was a son of Judge Woodbury Storer, and a grandson of Gov. John Langdon, of New Hampshire, and was graduated at Bowdoin College in 1822, and at the Harvard Medical School in 1825. For twenty-two years he was dean of the Harvard Medical School, besides filling in it the chair of Obstetrics and Legal Medicine, and he was also President of the American Medical Association, a member of the Massachusetts Medical Society, and of the American Academy of Arts and Sciences, and author of "A History of Massachusetts." For many years Dr Storer was a collaborator with Prof. Agassiz in natural history research.

Strong, William E., lawyer, born in Granville, Washington County, N. Y., Aug. 10, 1840; died in Florence, Italy, April 10, 1891. He was educated in Racine, Wis., and was admitted to the bar there in 1861. At the beginning of the civil war he raised a company, which was incorporated in the 2d Wisconsin Infantry, and with it he went to the front as captain. He took part in the battle of Bull Run, was promoted major of the 12th Wisconsin Infantry, Sept. 12, 1861, and during the remainder of the war served with the armies in the West. In October, 1862, he was attached to the staff of Gen. McKean as inspector-general of the 6th division of the right wing of the Army of the Tennessee, and two months afterward he was promoted to the staff of Gen. McPherson as inspector-general of the right wing of that army. He was commissioned lieutenant-colonel and inspector-general of the 17th Army Corps in February, 1863, and from April 20, 1864, till the close of the war he was inspector-general of the Department of the Tennessee. For gallantry at Atlanta he was promoted colonel, to date from July 22, 1864, and for meritorious conduct during the war he was brevetted brigadier-general March 21, 1865. Gen. Strong was inspector-general of the Freedman's Bureau from May, 1865, till September, 1866, and then retired to become secretary of the Peshtigo Lumber Company, belonging to the estate of William B. Ogden, of Chicago, whose niece he had married. In 1873 he was elected president of the company.

Stuart, Alexander Hugh Holmes, lawyer, born in Staunton, Va., April 2, 1807; died there, Feb. 13, 1891. He was graduated at the University of Virginia in 1828, and was admitted to the bar the same year. In 1832 he was a delegate to the Young Men's Convention in Washington, held in the political interests of Henry Clay; in 1836 he was elected to the Virginia House of Delegates, where he was conspicuous for his advocacy of a liberal system of internal improvements, and where he served three terms; and in 1840 and 1842 he was elected to Congress. He was a Clay presidential elector in 1844, and a Taylor elector in 1848. In September, 1850, he was appointed Secretary of the Interior, and he held the office till March, 1853. From 1857 till 1861 he was a member of the Virginia Senate, where he made a strong fight against the secession movement, and on the passage of the ordinance of secession announced his retirement from public life, to which he returned after the war. He was re-elected to Congress in 1865, but was not admitted. In 1876-'82 and 1884-'86 he was rector of the University of Virginia; in 1872 he succeeded Admiral Farragut as a trustee of the Peabody Educational Fund; and for many years was President of the Virginia Historical Society.

Stuart, Mary Maerae, philanthropist, born in New York city, in 1810; died there, Dec. 30, 1891. She was the daughter of Robert Maerae, one of the wealthiest merchants of New York in his day, and married Robert L. Stuart, head of the well-known firm of sugar refiners, R. L. & A. Stuart, about 1840. The Stuart brothers were noted for their gifts to charitable and educational institutions. In 1852 they began applying a certain percentage of their annual income to some form of charity, and their first gifts aggregated \$14,000. In 1879, on the death of Alexander, it was estimated that their joint gifts had amounted to \$1,391,000, and from the time of his brother's death till his own, in December, 1882, Robert gave more than \$500,000. Robert L. Stuart, having no near relatives, bequeathed his whole property absolutely to his widow, an estate valued at nearly \$6,000,000. The greater part of the benefactions of the brothers went to institutions connected with the Presbyterian Church, and after Robert's death his widow supplemented these gifts with others believed to aggregate \$1,500,000. By her will, executed Jan. 18, 1887, and three codicils, dated respectively Nov. 15, 1887, Nov. 25, 1889, and April 26, 1890, she made special bequests to relatives and personal friends, but she gave the bulk of her property to charitable and educational institutions. To the Lenox Library she gave her fine-art collections, valued at \$500,000, her collections of shells, minerals, and other natural-history specimens, a large portion of her library, and a residuary share in her estate, on conditions that the collections should be placed in a separate fire-proof structure and should never be exhibited on the Lord's Day. Other public bequests were \$5,000 each to nine charitable societies and institutions in New York city; \$10,000 to Cooper Union; \$25,000 to the New York Cancer Hospital; half of all the residue of her estate to the American Bible Society, the Board of Foreign Missions of the Presbyterian Church in the United States of America, the Board of Home Missions of the same Church, the Presbyterian Hospital in New York city, the Lenox Library, the Theological Seminary of the Presbyterian Church at Princeton, and the Board of Church Erection of the Presbyterian Church in the United States of America; and the other half to the Trustees of the Presbyterian Board of Publication, the Board of Education of the Presbyterian Church in the United States of America, the Presbyterian Board of Relief for Disabled Ministers and the Widows and Orphans of Deceased Ministers, the Board of Missions for Freedmen of the same Church, the American Sunday-school Union, the Trustees of the Presbytery of New York for church extension in the city, the New York Bible Society, the American Tract Society, the New City Mission and Tract Society, the Young Men's Christian Association of New York city, the Presbyterian Home for Aged Women, the Association for the Relief of Respectable Aged Indigent Females, the Home for Incurables, the Association for the Benefit of Colored Orphans, the Colored Home, the Children's Aid Society, the New York Juvenile Asylum, the Protestant Half-orphan Home, the Society for the Relief of Poor Widows with Small Children, the Society for the Relief of Destitute Children of Seamen, the New York Eye and Ear Infirmary, the New York Society for the Prevention of Cruelty to Children, the Manhattan Eye and Ear Hospital, the Society for the Relief of Ruptured and Crippled, the Woman's Hospital, and the Orphan Asylum at Bloomingdale. A computation of the value of her estate, \$5,000,000, would enable her executors to pay to each of the seven institutions to whom the first half of the residuary estate was given more than \$300,000, and to each of the twenty-six specified under the second half more than \$80,000, besides paying the specific bequests, which amounted to \$705,000. She originally intended giving \$50,000 to the American Museum of Natural History for its maintenance fund and her natural-history specimens and books relating thereto and \$50,000 to the Metro-

politan Museum of Art; but a fear that these institutions might be thrown open to the public on Sundays led her to make the disposition of the articles and money above noted by codicils.

Swift, John Franklin, lawyer, born in Bowling Green, Ky., Feb. 28, 1829; died in Tokio, Japan, March 10, 1891. When eighteen years old he removed to St. Louis, Mo., where he learned the tin-smith's trade. In 1852 he went to San Francisco and engaged in the produce business, till he began studying law, and in 1857 he was admitted to the bar. He soon became widely known as a constitutional lawyer and as an eloquent speaker, and was successful in managing large cases. In 1862 he began taking an active part in politics; in 1862, 1873, and 1877 he was a member of the Legislature; in 1875 was defeated as an independent candidate for Congress; in 1877 was elected to Congress as a Republican; and in 1880 he accompanied James B. Angell and William H. Trescott to Peking, where they negotiated a treaty between the United States and China. In 1886 he was defeated as the Republican candidate for Governor of California, and in March, 1889, he was appointed minister to Japan.

Taft, Alphonso, jurist, born in Townshend, Vt., Nov. 5, 1810; died in San Diego, Cal., May 21, 1891. He was graduated at Yale College in 1833, taught two years in the high school in Ellington, Conn., was a tutor and law student at Yale in 1835-'37, and was admitted to the bar in New Haven in 1838. In 1840 he removed to Cincinnati, where he acquired a large practice. He was a delegate to the National Republican Convention in 1856, and was defeated as Republican candidate for Congress the same year. In 1865 he was appointed judge of the Superior Court of Cincinnati to fill a vacancy, and on the expiration of the term he was twice elected to the office, once by the unanimous vote of both parties. From 1871, when he resigned, till 1876 he practiced law in partnership with two of his sons, and in 1875 he was defeated as candidate for the Republican nomination for Governor because of a judicial opinion he had rendered concerning the Bible in the public schools. In March, 1876, he was appointed Secretary of War, and in May following he was transferred to the office of Attorney-General, which he held till March, 1877. He then practiced law in Cincinnati till April, 1882, when he was appointed United States minister to Austria, whence he was transferred to Russia in 1884, where he served till August, 1885.

Talcott, Alvan, physician, born in North Bolton, Conn., Aug. 17, 1804; died in Guilford, Conn., Jan. 17, 1891. He was graduated at Yale College in 1824, and at the Yale Medical School in 1831; practiced in Vernon, Conn., till 1841, and in Guilford till about 1880, and was one of the best Greek scholars in the State. He spent much of his leisure for many years in preparing genealogies of the descendants of Guilford's forty original settlers; published a "Genealogy of the Chittenden Family" (1882); gave \$25,000 to Yale College to endow the Talcott professorship of Greek in 1888; and bequeathed his medical and surgical books and all his instruments to the medical department of the college.

Talmage, Goyen, clergyman, born in Somerville, N. J., Dec. 7, 1821; died there, June 24, 1891. He was a brother of the Rev. Thomas De Witt Talmage, D. D., was graduated at Rutgers College in 1842, and then took a three years' course at the Theological Seminary in New Brunswick, N. J. After holding pastorates in several places in New York and New Jersey, he was chosen secretary of the Board of Domestic Missions of the Dutch Reformed Church in 1863. He was President of the General Synod of the Reformed Church of America in 1874. Dr. Talmage published numerous sermons and tracts, and was a frequent contributor to religious periodicals.

Taunt, Emory H., naval officer, born in New Jersey, about 1845; died in Bona, Congo Free State, Africa, Jan. 18, 1891. He was appointed a midshipman in the United States navy in 1865; was promoted ensign July 12, 1870, master Dec. 28, 1872, and Lieu-

tenant Aug. 8, 1876; and resigned June 30, 1888. In 1884 he was attached to the "Thetis" on the Greeley relief expedition to the polar regions, and in the following year he went to Africa, and made the passage of the Congo river from its mouth to Stanley Falls. It is believed that the exposures during this trip affected his mind; for in October, 1887, while serving on the "Yantic," in New York harbor, he absented himself from his vessel for several days, for which he was tried and sentenced to be dismissed from the service; but he was allowed to resign. In December, 1888, he felt strong enough to make another trip to Africa, and was appointed United States consular agent at Boma, where he died.

Taylor, Alfred, naval officer, born in Fairfax County, Va., May 23, 1810; died in Washington, D. C., April 19, 1891. He was appointed a midshipman in the United States navy in 1825; was promoted passed midshipman June 4, 1831, lieutenant Feb. 3, 1837, commander Sept. 14, 1855, captain July 16, 1862, commodore Sept. 27, 1866, and rear-admiral Jan. 29, 1872; and was retired May 23, 1872. During his naval career he was on sea service eighteen years three months, on shore or other duty eighteen years three months, and was unemployed twenty-nine years six months. During the Mexican War he served on the "Cumberland" in the blockade of Vera Cruz; in 1855 he accompanied Commodore Perry on his expedition to Japan; in 1862-'65 he was attached to the navy yard at Boston; and in 1869 he was a light-house inspector.

Taylor, David, jurist, born in Carlisle, Schoharie County, N. Y., March 11, 1818; died in Milwaukee, Wis., April 3, 1891. He was graduated at Union College in 1841, and admitted to the bar of his native county in 1846. Soon afterward he removed to Sheboygan, Wis., and engaged in practice. He was district attorney of the county one term, was a member of the State Assembly in 1853 and of the State Senate in 1855-'56, and was elected judge of the 4th Judicial Circuit in 1857. He held this office till 1869, and just before the expiration of his second term he was again elected to the State Senate, where he served in 1869-'70. At the close of his term he removed to Fond du Lac. In 1876 he was appointed a commissioner to revise the statutes of Wisconsin, and on the enlargement of the State Supreme Court he was chosen without opposition one of the additional associate justices in 1878, in which capacity he served until his death.

Taylor, Julius S., geologist, born in Saratoga, N. Y., in 1808; died in Kankakee, Ill., April 11, 1891. He received a classical education in New York city, spent four years as a sailor before the mast, was graduated at Jefferson Medical College, Philadelphia, in 1835, and, after practicing for three years in Cape May, N. J., removed to Dayton, Ohio, whence he went to Kankakee in 1844. He became successful as a physician, but will doubtless be best remembered because of his researches and collections in geology. His many years spent in the Miami valley in Ohio afforded him opportunities to gratify his scientific tastes in a field then exceedingly rich and unbroken. He investigated with great care and patience every part of this region, and did much to establish the glacial-drift theory as a geological fact. His latter years were spent almost wholly in the field of paleontology. In 1880 he gave his collection of geological specimens, one of the most complete in the West, to Blackburn University, Carlinville, Ill., where, arranged by himself, it forms an important feature of the museum to which his name has been given.

Thatcher, James Kingsley, physician, born in New Haven, Conn., Oct. 19, 1847; died there, April 20, 1891. He was a son of Prof. Thomas A. Thatcher, was graduated at Yale College in 1868, was tutor in physics and zoölogy there in 1871-'79, and was appointed Professor of Physiology in the Yale Medical School in 1879, and in 1887 the subject of clinical medicine was added to his professorship. He made original investigations in comparative anatomy and

physiology, the results of which when published in 1877 attracted much attention in England and Germany, as they involved a criticism of Huxley and Gegenbauer on vertebrate evolution.

Thompson, John, financier, born in Peru, Berkshire County, Mass., Nov. 27, 1802; died in New York city, April 19, 1891. He was brought up on a farm, attending school in the winter; taught in Hampshire County, Mass., when nineteen years old; and began his business career in Poughkeepsie, N. Y., as agent of a lottery company authorized by the Legislature for the benefit of Union College. After working there three years he removed to New York city with a capital of \$2,000 and opened a broker's office in Wall Street. He soon recognized the necessity for a publication that would warn the business community against the counterfeit bank bills that were being widely circulated, and established "Thompson's Bank-note Reporter," the pioneer in its line, which at one time had a circulation of 100,000 copies a week. Early in the civil war he made the acquaintance of Secretary Chase, and for many years thereafter his advice was frequently sought by the financial officers of the Government. On June 17, 1861, he wrote to President Lincoln and Secretary Chase, urging that specie payments should be maintained and proposing a board of currency commissioners, whose duties he minutely outlined. Subsequently he proposed and strongly advocated the establishment of a national banking system, and, after the project had received congressional sanction, he founded the First National Bank of New York city in 1863. Owing to general opposition to the scheme, this bank was owned by the Thompson family almost exclusively; but the public came to its support and it flourished. In 1878 he severed his connection with this bank and organized the Chase National Bank, of which he was vice-president till 1884, and subsequently for a short period president. Mr. Thompson published a pamphlet on "Free Silver Lunatics" (New York, 1889), and had nearly completed at the time of his death a book on "Sixty Years in Wall Street."

Todd, Lemuel, lawyer, born in Carlisle, Pa., July 29, 1817; died there, May 12, 1891. He was graduated at Dickinson College in 1839, and was admitted to the bar in 1841. In 1854 he was elected to Congress from the 15th Pennsylvania District as a Republican; in 1856 was defeated for a second term; in 1857 was defeated by David Wilmot as candidate for the gubernatorial nomination; and in the same year was chairman of the Republican State Committee. He was president of the State conventions in 1863, 1868, and 1888; was major of the 1st Regiment, Pennsylvania Volunteer Reserve Corps during a part of the civil war, and was inspector-general of the State under Gov. Curtin. In 1872 he was again elected to Congress as one of the three Congressmen-at-large, and there served as a member of the Committee on Expenditures in the Post-office Department.

Tourgee, Eben, musical director, born in Warwick, R. I., June 1, 1834; died in Boston, Mass., April 12, 1891. He began business life as a helper in a calico-printing factory, studied in East Greenwich Academy, and in 1847-'51 worked in the cotton mills at Harrisville, R. I. During the latter period he found time to study music. In 1851 he opened a small music store in Fall River, and in 1853 began teaching music in the public schools and to private classes. Six years afterward he established a musical institute at East Greenwich; in 1863 he went to Europe to study; in 1864 he founded a conservatory in Providence, and in 1867 this school was removed to Boston and became the New England Conservatory of Music. Wesleyan University gave him the degree of Mus. Doc. In 1869 he organized the chorus of the Peace Jubilee. In 1872 the College of Music of Boston University was founded, and Dr. Tourgee was elected its dean. He gathered nearly 20,000 singers for the chorus of the World's Peace Jubilee in 1874, and organized and conducted the large chorus choir of the Music Hall Society in 1876.

Trimble, Joseph McDowell, clergyman, born in Hillsborough, Ky., in 1807; died in Columbus, Ohio, May 6, 1891. He removed to Ohio in childhood, was graduated at Ohio University, Athens, in 1828, and joined the Ohio Conference of the Methodist Episcopal Church in 1829. In 1834-'35 he was secretary of the Ohio Conference; from 1834 till his death he was a delegate to every General Conference of his Church; in 1848 and 1852 he was secretary of the General Conference; for five years he was a professor in Augusta College, Kentucky; in 1864-'68 he was assistant missionary secretary in the West; and for nearly forty years he was a trustee of Ohio Wesleyan University. Dr. Trimble discharged the duties of forty-eight appointments, gave his first dollar to aid in establishing Ohio Wesleyan University, founded the Preachers' Relief Society of his conference, and gave it in all \$65,000.

Tripp, Alonso, educator, born in Harwich, Mass., March 14, 1818; died in Newton, Mass., Dec. 20, 1891. He was bred to the sea, and visited Europe several times, his trip in 1847 being for the purpose of studying the principal educational systems. On his return he was engaged by the Massachusetts Board of Education to lecture before teachers' institutes, and subsequently he taught in New England academies, and delivered lectures on "France and Europe since 1848" before the principal educational institutions in the United States and Canada. In 1848 he published a book on his European travels, of which sixty editions were printed.

Tufts, Gardner, executive officer, born in Lynn, Mass., July 3, 1828; died in Boston, Mass., Nov. 23, 1891. He entered public life in 1861 as member of the State Assembly, and the same year became connected with the Post-office Department in Washington. In 1862 he was appointed by Gov. Andrew Massachusetts State agent at Washington, the first appointment of the kind by any governor, and he held the office till 1876. During this time he had the care of the sick, wounded, and dead soldiers of Massachusetts in the Army of the Potomac; established a free bureau for the collection of the pay, bounties, and pensions of soldiers from his State; collected more than \$1,000,000 on these accounts; and by appointment of Secretary Stanton served as a member of the board for the inspection of military hospitals and prisons in the Department of Washington. He was appointed a paymaster in the army in 1863, but at the request of the State authorities he resigned his commission and remained State agent. Under Gov. Claflin's administration he was appointed visiting agent for the Board of State Charities and agent for juvenile offenders in 1869, and held the office for ten years. He then became steward and treasurer of the State Reformatory for Women, and after five years' service there he was elected superintendent of the new State Reformatory at Concord in 1884, and held this office till his death.

Turney, Jacob, lawyer, born in Greensburg, Pa., Feb. 18, 1825; died there, Oct. 4, 1891. He received an academical education and was admitted to the bar in 1849. In 1850 he was elected district attorney for Westmoreland County, in 1853 was re-elected, in 1856 was a Democratic presidential elector, in 1857 was elected State Senator, in 1871 was defeated for the same office, and in 1874 and 1876 was elected to Congress from the 21st Pennsylvania District as a Democrat. He also served as a member of the committees on Elections and on Territories.

Twoedy, John H., pioneer, born in Danbury, Conn., in 1814; died in Milwaukee, Wis., Nov. 12, 1891. He was graduated at Yale College, studied law and was admitted to the bar, and removed to Wisconsin in 1836. He was one of the earliest promoters of railroad extension in that State, having presented the draft of a proposition for the city to loan from \$100,000 to \$250,000 to aid the construction of any railroad that would connect Milwaukee with the Mississippi river at a public meeting in Milwaukee on Feb. 1, 1849. The adoption of his proposition was the first

step in the creation of the present great system of the Chicago, Milwaukee and St. Paul Railroad Company. In 1841-'42 he was elected to the Territorial Council, in 1846 to the Constitutional Convention, in 1847 to Congress as Territorial delegate, and in 1848 was defeated as the first Whig candidate for Governor. While in Congress he drew the enabling act for the admission of the Territory into the Union as a State. After serving in the Legislature in 1853 he withdrew from political life, and was afterward interested in financial corporations.

Usher, James M., clergyman, born in 1814; died in Medford, Mass., Dec. 31, 1891. He was apprenticed to the baker's trade, but when seventeen years old began preparing for the Universalist ministry, in which he was ordained in 1839. From 1839 till 1844 he lived in Lexington, Mass. He established the first Universalist paper in the United States in 1841, and remained its sole owner till 1863. In 1861 he acquired the "Trumpet," and in 1863 the "Christian Freeman." He was elected to the General Court from Lynn in 1848, and, at the request of Horace Mann, was appointed to the Committee on Public Education, and in 1851, 1857, and 1858 he was elected to the State Senate from Middlesex County. In 1858 he was also a presidential elector on the Democratic ticket. Afterward he became a Republican, an anti-slavery advocate, and founder of the Massachusetts Total Abstinence Society. In 1867 he was principal agent of the State at the Paris Exhibition.

Van Cleave, Horatio Phillips, military officer, born in Princeton, N. J., Nov. 28, 1809; died in Minneapolis, Minn., April 24, 1891. He was educated at Princeton and at the United States Military Academy, being graduated at the latter in 1831; served on frontier duty in the army from 1831 till 1836; resigned and engaged in farming near Monroe, Mich., till 1839; and, after teaching in Cincinnati, Ohio, one year, followed farming near Ann Arbor, Mich., till 1854. In 1855 he was a civil engineer in the State service, and in 1856 was appointed United States Surveyor of Public Lands in Minnesota. He was appointed colonel of the 2d Regiment of Minnesota Volunteers early in 1861, took part in the operations in Kentucky, was promoted brigadier-general of volunteers March 21, 1862, and with the Army of the Ohio was at the siege and capture of Corinth. At the battle of Stone River, Tenn., he was disabled by a wound, but he soon recovered and commanded his brigade at Chickamauga. From December, 1863, till Aug. 24, 1865, he was in command at Murfreesborough. He was brevetted major-general of volunteers March 13, 1865, and after the war, by special act of Congress, he was restored to the regular army and retired. In 1866-'70 and 1876-'82 he was Adjutant-General of Minnesota.

Van Dyke, Henry Jackson, clergyman, born in Abington, Pa., March 3, 1822; died in Brooklyn, N. Y., May 26, 1891. He was graduated at the University of Pennsylvania in 1843, and at Princeton Theological Seminary in 1845; was called to pastorates in Bridgeton, N. J., in 1845, Germantown, Pa., in 1852, and Brooklyn, N. Y., in 1853; and was moderator of the General Assembly of the Presbyterian Church in Brooklyn in 1876. For nearly forty years he had been pastor of the 2d Presbyterian Church in Brooklyn. He was active in the movement for the reunion of the old and new schools of the Church in 1870. He was a Calvinist of the Princeton school, and was a member of the General Assembly's Committee on Revision of the Westminster Confession of Faith. A few days before his death he was elected Roosevelt Professor of Systematic Theology in the Union Theological Seminary.

Vibbard, Chauncey, capitalist, born in Galway, Saratoga County, N. Y., Nov. 11, 1811; died in Macon, Ga., June 3, 1891. He was educated at Mott's Academy, in Albany, N. Y., became a grocery clerk when fifteen years old, afterward entered a wholesale dry-goods store in New York city, and in 1834 went to Montgomery, Ala., as a book-keeper. In 1836 he began his career in railroad work as chief clerk of the

newly opened Utica and Schenectady Railroad, of which Ernstus Corning was president. In 1848 he was appointed general superintendent, and, on the consolidation of the various roads between Albany, Buffalo, and Niagara Falls, under the name of the New York Central, he was given a similar office in that corporation, which he held until 1865, having full charge of the reorganization and management of the road. He was elected to Congress from the 18th New York District as a Democrat in 1860, and there served on the committees on Post-offices and Post-roads and on Expenditures in the War Department. In 1862, at the request of the Secretary of War, he accepted temporarily the office of director and superintendent of the military railroads of the United States. After resigning the superintendency of the New York Central Railroad, Mr. Vibbard settled in New York city and applied himself to interests with which he had been connected for several years. He was one of the principal owners of the Day Line of steamers plying between Albany and New York, and was the capitalist in a large mercantile establishment in New York doing business almost exclusively with the Southern States. He was a director in the original Greenwich Street Elevated Railroad Company and in the central branch of the Union Pacific Company. In recent years he had been interested in railroad and other enterprises in the Southern States and in South America.

Wadhams, Edgar Philip, Roman Catholic Bishop of Ogdensburg, N. Y., born May 21, 1817; died Dec. 5, 1891. He was a native of Lewis, Essex County, N. Y., whence his family removed in 1822 to Westport. His parents were Episcopalians, and destined their son for the ministry. He was graduated at Middlebury College in 1838, entered the General Theological Seminary, New York city, where he received deacon's orders, and was sent to take charge of the missions at Port Henry and Ticonderoga. The tractarian movement in England was then at its height, and was beginning to be reflected in this country by numerous conversions from Anglicanism to Roman Catholicism. Of these converts, Mr. Wadhams was one of the first, being received into the Church in June, 1846. He went to St. Mary's Seminary, Baltimore, as a student, and was ordained priest Jan. 15, 1850, by the Rt. Rev. John McCloskey (afterward Cardinal), then Bishop of Albany, and was immediately appointed assistant in the Albany cathedral. Here he remained for many years, his genial social qualities and his sterling honesty endearing him to all the citizens, both Catholic and Protestant. In the latter part of 1865 he was made pastor of the cathedral and vicar-general of the diocese. In 1872 the diocese of Ogdensburg was created, Father Wadhams was unanimously recommended for its first bishop, and he was consecrated at Albany, May 5, 1872, by Archbishop McCloskey. He devoted himself to building churches and parochial schools in his diocese, and founded a college at Watertown, under the care of the Fathers of the Sacred Heart. He never indulged in controversy, and his administration was marked by his modest and unostentatious efforts to extend the sphere of influence of his Church. All his financial obligations were promptly met, and the affairs of the diocese were brought to a very prosperous condition. Feeling the increasing weight of years, some months before his death he caused steps to be taken looking to the appointment of a coadjutor, and the matter was under consideration at Rome.

Wadleigh, Bainbridge, lawyer, born in Bradford, N. H., Jan. 4, 1831; died in Boston, Mass., Jan. 24, 1891. He received an academical education, was admitted to the bar in 1850, and settled in Milford, N. H. In 1855, 1856, 1859, 1860, 1869, 1870, 1871, and 1872 he was a member of the State House of Representatives, and in 1872 was elected United States Senator as a Republican. He was a member of the committees on Patents, on Military Affairs, and on Elections. In 1880 he removed to Boston and resumed practice.

Walker, David S., jurist, born in Logan County, Ky., in 1815; died in Tallahassee, Fla., July 20, 1891. He removed to Florida about 1840, was the first State Senator from Leon and Wakulla Counties after Florida was admitted to the Union, and for many years was the leader of the Whig party in that State. He was elected Governor in 1865, and held the office till 1868. He held several offices of trust at different times, was once a candidate for the United States Senate, and at the time of his death was judge of the 2d Judicial Circuit Court.

Walling, George Washington, ex-Superintendent of police in New York city, born in Middletown township, Monmouth County, N. J., May 1, 1823; died in Holmdel, Monmouth County, N. J., Dec. 31, 1891. He was a son of Leonard Walling, a member of the Legislature of New Jersey, and a grandson of Daniel Walling, a soldier of the Revolutionary War. The first years of his manhood were spent as a sailor on the steamboats plying the harbor and rivers of New York city. In 1845 he was employed on the revenue steamer "Spencer"; was appointed a policeman of the city of New York on Dec. 22, 1847; was promoted captain in October, 1853, inspector Nov. 21, 1866, superintendent July 23, 1874; resigned June 9, 1885, and was granted a pension for his long and faithful services. He was engaged in suppressing the Astor Place riots in 1849; had command of a portion of the police force in the draft riots of July, 1863, when his services were especially conspicuous and effective; and was in command of the police in the Orange riots of July, 1871. After his retirement he returned to the county of his birth. At the time of his death he was a resident of Keyport, Monmouth County, N. J., one of the directors of the Keyport Banking Company, and chief of the fire department of that town.

Waterman, Robert Whitney, capitalist, born in Fairfield, N. Y., Dec. 25, 1823; died in San Diego, Cal., April 12, 1891. He removed to Sycamore, Ill., while a youth, worked in a country store till 1846, then engaged in business for himself in Belvidere, Ill., and in 1850-'52 was an unsuccessful miner in California. In 1853 he established the "Independent" in Wilmington, Ill.; in 1856 was active in the Fremont presidential canvass; and in 1858 took the stump in the Lincoln-Douglas senatorial contest. He returned to California in 1860 and purchased a ranch, which proved an unsuccessful venture; and, greatly reduced in funds, he went on an extensive prospecting tour and ultimately struck a rich silver ledge in Mohave Desert, which became the famous Calico mining district. From that time his career was prosperous, and besides his mining holdings he acquired large ranch properties. In 1863 he made his permanent residence in California; in 1886 was elected Lieutenant-Governor of the State on the Republican ticket; and in September, 1887, on the death of Gov. Bartlett, he became Governor, and held the office till 1891.

Watterson, Harvey Magee, journalist, born in Bedford, Tenn., Nov. 23, 1811; died in Louisville, Ky., Oct. 1, 1891. He received a classical education in Princeton, Ky., established a newspaper in Shelbyville, Tenn., in 1831; was elected to the Legislature in 1835, and to Congress in 1838 and 1840, and then, declining a renomination, was sent on a diplomatic mission to Buenos Ayres, where he remained a year. On his return he was re-elected to the Legislature, of which he became Speaker. In 1847-'51 he was editor and proprietor of the "Nashville Union," and in 1851 he was appointed editor of the "Washington Union." In 1860 he was a delegate to the National Democratic Convention, where he voted for Stephen A. Douglas, and was also a Douglas elector-at-large, and in 1861 he was a delegate to the State convention called to consider the question of secession. In all his political life he had been dominated by an uncompromising devotion to the Union, and, finding that his efforts to avert the impending disaster were futile, he retired to his Beach Grove home till the questions leading to the war had been settled by force of arms. When

Andrew Johnson became President Mr. Watterson was called by him to Washington, and for a time was his most intimate adviser. He practiced law there in 1865-'79, and subsequently spent his time partly there and partly in Louisville, Ky., as an editorial writer on "The Courier-Journal," of which his son, Henry Watterson, has long been editor.

Waud, Alfred B., artist, born in London, England, in 1828; died in Marietta, Ga., April 6, 1891. He received his art education in his native city, removed to New York in 1858, and was one of the early exhibitors at the National Academy of Design, but became most widely known as an illustrator for the periodical press and of books. He was one of the war pictorial correspondents of "Harper's Weekly," and was one of the first artists in the country to make his illustrations in black and white. Since the war he had drawn much for illustrated weekly and monthly publications, and in recent years he had contributed numerous illustrations to the war articles in the "Century" magazine. At the time of his death he was making an extended sketching tour of the battle-fields in the South, for the purpose of illustrating a new series of war narratives.

Whithorne, Washington Curran, lawyer, born in Marshall County, Tenn., April 19, 1825; died in Columbia, Tenn., Sept. 21, 1891. He was graduated at East Tennessee University, Knoxville, in 1843, studied law, and was admitted to the bar. He was a State Senator in 1855-'58, and a member and Speaker of the Assembly in 1859; and was the Democratic presidential elector-at-large in 1860. Early in 1861 he was appointed assistant adjutant-general in the Confederate Army of Tennessee, and afterward was Adjutant-General of the State till the close of the war. In 1870 his political disabilities were removed by Congress, and in the same year he was elected to that body from the 7th Tennessee District as a Democrat. He was re-elected five times, was appointed United States Senator to fill the vacancy caused by the resignation of Howell E. Jackson in 1886, and served till March 8, 1887.

Wickersham, James Pyle, educator, born in Chester County, Pa., March 5, 1825; died in Lancaster, Pa., March 25, 1891. He became a teacher when sixteen years old, and principal of the Marietta Academy, Pennsylvania, at the age of twenty. In 1854 he was appointed the first superintendent of public schools in Lancaster County, and in the following year opened the first normal school in the State at Millersville. From 1866 till 1881 he was State Superintendent of Public Instruction, and during President Arthur's administration he was United States minister to Denmark. Dr. Wickersham had twice been President of the National Association of School Superintendents, had edited the "Pennsylvania School Teacher," and had published "School Economy" and "Methods of Instruction."

Wickham, Joseph Dresser, clergyman, born in Thompson, Conn., April 4, 1797; died in Manchester, Vt., May 12, 1891. He was graduated at Yale College in 1815, and for five years had been the last survivor of his class, and for three years the oldest graduate of the college. After graduating he acted as amanuensis to President Dwight for a year, was rector of the Hopkins Grammar School, New Haven, in the following year, and was a tutor in Yale and a student of theology in 1818-'20. In 1821 he became a missionary on Long Island, afterward labored in central New York in the service of the Presbyterian Education Society, and in 1823 was ordained to the ministry and installed pastor of the Congregational Church in Oxford, N. Y. For three years from 1825 he was in pastoral charge of the United Presbyterian Churches of New Rochelle and West Farms, N. Y.; in 1828-'34 was one of the proprietors of Washington Institute, New York city; in November, 1834, was installed pastor of the new Presbyterian Church in Matteawan, N. Y.; and in 1837-'62 he was in charge of Burr Seminary, Manchester, Vt., excepting for three years, when he was treasurer and acting Professor of Greek

and Latin in Middlebury College and was connected with the collegiate institute, Poughkeepsie, N. Y.

Wiestling, George B., civil engineer, born in Harrisburg, Pa., Jan. 28, 1835; died in Chambersburg, Pa., June 17, 1891. In early life he was a civil engineer in the employ of the Pennsylvania Railroad, and afterward he built the large tunnel on the Delaware, Lackawanna and Western Railroad at Oxford Furnace, N. J. He served in the national army through the civil war, invented for the Government an attachment designed to assist the movement of heavy artillery through the deep mud in Virginia, and was with Gen. Kearney's brigade during the advance from Burke's Station to Bull Run. One of his scouts captured the Confederate mail that contained an announcement of the intended movement of Gen. Longstreet's corps upon Norfolk, and the capture resulted in the concentration of 30,000 national troops at Suffolk, where the Confederate advance was checked. He was a Republican presidential elector in 1880, first President of the United States Association of Charcoal Iron Workers, the first engineer to demonstrate that a furnace could be banked over Sunday, President of the Montalto Iron Company, and Superintendent of the Montalto Railroad.

Wild, Augustus, military officer, born in Brookline, Mass., in 1825; died in Medellin, Colombia, South America, in August, 1891. He was graduated at Harvard College in 1844, and at the Jefferson Medical College soon afterward; took a course of medical lectures in Paris; was a medical officer in the Turkish army during the Crimean War; and, returning to Brookline, practiced till the beginning of the civil war. Early in 1861 he was commissioned a captain in the 1st Massachusetts Volunteers, with which he served at Bull Run and in the Peninsular campaign, being severely wounded at Fair Oaks. He was promoted major while yet disabled, lieutenant-colonel on his recovery, and colonel of the 35th Massachusetts Volunteers on its organization; and he returned to the front in time to take part in the battle of South Mountain, where he was again wounded and lost an arm. On April 23, 1863, he was promoted brigadier-general of volunteers, and afterward he assisted in raising and commanded the regiments of colored troops known as Wild's African Brigade till the close of the war. Subsequently he became superintendent of the Diana mine at Austin, Nev. At the time of his death he was engaged in mining operations in South America.

Wiley, John, publisher, born in Flatbush, Long Island, N. Y., Oct. 4, 1808; died in East Orange, N. J., Feb. 21, 1891. He was the son of Charles Wiley, who published "The Spy," the first of James Fenimore Cooper's American romances. When seventeen years old he entered the publishing house in which his father was a partner, and on the death of his father, in 1828, he went into business for himself. In 1832 he formed a partnership with George Long, and subsequently, when George P. Putnam had completed his apprenticeship with Jonathan Leavitt, and had attained his majority, the firm of Wiley & Putnam was formed. The best known publication of the firm at this time was the series called "The Library of Choice Reading," edited by Evert A. Duyekineck. In 1848 Mr. Putnam retired from the firm, and after carrying on the business alone till 1865, Mr. Wiley took his son Charles into partnership. In 1875, when another son, William H., was admitted, the firm name was changed to John Wiley & Sons. In recent years the firm has made a specialty of scientific publications. Mr. Wiley was always a strong advocate of international copyright. He was the American publisher of Ruskin's works.

Wilson, Ephraim King, jurist, born in Snow Hill, Md., Dec. 22, 1831; died in Washington, D. C., Feb. 24, 1891. He was graduated at Jefferson College, Pennsylvania, in 1841, studied law, and was admitted to the bar. In 1847 he was elected a member of the Maryland House of Delegates; in 1852 was a Pierce and King presidential elector; in 1872 was elected to

Congress; and in 1878-'84 was judge of the 1st Judicial District of Maryland, which office he resigned on being elected United States Senator as a Democrat. At the time of his death he was a member of the Senate committees on Civil Service and Retrenchment, Claims, Post-offices, and Post-roads, Revision of the Laws, and on inquiry into all claims of citizens of the United States against the Government of Nicaragua.

Winchell, Alexander, geologist, born in North East, Dutchess County, N. Y., Dec. 31, 1824; died in Ann Arbor, Mich., Feb. 19, 1891. He was graduated at Wesleyan University in 1847; taught natural science in Pennington Seminary, New Jersey, in 1848; and in Amenia Seminary, New York, in 1849; and was engaged in educational work in Alabama in 1850-'54. In the latter year he became Professor of Physics and Civil Engineering in the University of Michigan, and after a year was transferred to the chair of Geology, Zoology, and Botany, which he held till 1873, in the mean time holding a similar chair in the University of Kentucky for three years. He was also director of the geological survey of Michigan in 1859-'61 and 1869-'71. In 1873 he was chosen Chancellor of Syracuse University, but he retired from the office at the end of the year to take the chair of Geology, Zoology, and Botany. He held this chair till 1879, and in 1875-'78 also held a similar chair in Vanderbilt University, dividing his time between the two institutions. In 1879 he returned to the University of Michigan as Professor of Geology and Palæontology, and remained there till his death. He was a believer in the existence of a preadamite race. Among his numerous publications are: "Genealogy of the Family of Winchell in America" (Ann Arbor, 1869); "Sketches of Creation" (New York, 1870); "A Geological Chart" (1870); "Michigan," popular sketches of its topography, climate, and geology (1873); "The Doctrine of Evolution" (1874); "Reconciliation of Science and Religion" (1877); "Preadamites, or a Demonstration of Existence of Men before Adam" (Chicago, 1880); "Sparks from a Geologist's Hammer" (1881); "World Life, or Comparative Geology" (1883); "Geological Excursions, or the Rudiments of Geology for Young Learners" (1884); "Geological Studies, or Elements of Geology" (1886); and "Walks and Talks in the Geological Field" (1886).

Windom, William, lawyer, born in Waterford, Belmont County, Ohio, May 10, 1827; died in New York city, Jan. 29, 1891. He received an academical education, was apprenticed to the tailor's trade, studied law at Mount Vernon, Ohio, and was admitted to the bar of Knox County in 1850. In 1852 he was elected prosecuting attorney of Knox County, in 1855 removed to Winona, Minn., and in 1858 was elected to Congress as a Republican. He was re-elected four times, and at the close of his fifth term declined re-election. In July, 1870, he was appointed United States Senator to fill a vacancy caused by the death of Senator Daniel S. Norton; in January following he was elected to that office for a full term, and in 1877 he was re-elected. While a member of the House he served on the "Peace Committee" of thirty-three; on the committees on Public Lands, on Public Expenditures, on Indian Affairs; and on the special committee to visit the Indian tribes in the West; and also was active in promoting the passage of the homestead law of 1862. In the Senate he was chairman of the Com-



mittee on Appropriations, and in 1871 chairman of the special Committee on Transportation Routes to the Seaboard. He resigned his seat in the Senate on March 4, 1881, to enter President Garfield's Cabinet as Secretary of the Treasury, and with the rest of the Cabinet resigned his office on the accession of President Arthur, in September. On Oct. 26 he was re-elected Senator to fill his own unexpired term, and at its close, on March 3, 1883, he settled in New York city and became interested in financial enterprises. On the inauguration of President Harrison, in 1889, Mr. Windom was reappointed Secretary of the Treasury, and he held the office till his death. On the evening of Jan. 29, 1891, he attended a banquet of the New York Board of Trade and Transportation, and responded to the first toast, "Our Country's Prosperity dependent upon its Instruments of Commerce." He concluded a long and thoughtful address with the words: "Give us direct and ample transportation facilities under the American flag and controlled by American citizens, a currency sound in quality and adequate in quantity, an international bank to facilitate exchanges, and a system of reciprocity carefully adjusted within the lines of protection, and not only will our foreign commerce again invade every sea, but every American industry will be quickened and our whole people feel the impulse of a new and enduring prosperity," and a moment afterward he fell dead in his chair.

Witherspoon, Andrew Jackson, clergyman, born in Waxham settlement, S. C., in 1825; died in Moss Point, La., Oct. 25, 1891. He was educated at South Carolina College, and after studying law abandoned it for the ministry and settled in Alabama. During the civil war he was chaplain of the 21st Alabama Regiment, and by his bravery in action he became widely known as the "fighting chaplain." On one occasion, when the principal officers of his regiment had been killed or disabled in the early part of an engagement, he took command and led his men through a hard day's fight. He was in charge of the Seamen's Bethel in New Orleans for more than twenty years, and in that time he built a commodious church and dormitory for sailors.

Wood, Daniel F., lawyer, born in Pompey, N. Y., Nov. 5, 1819; died in Syracuse, N. Y., May 1, 1891. He was graduated at Hamilton College in 1843, and admitted to the bar in 1846, and was city attorney of Syracuse in 1850-'53. In 1853-'54 he was a member of the State Assembly, serving as chairman of the Committee on Colleges, Academies, and Common Schools, chairman of the Committee on Salt, and member of those on the Code and on Ways and Means. He matured and carried through the act creating the department of public instruction. He was returned to the Assembly in 1865, 1866, and 1867, and in that period was chairman of the committees on Canals and on Ways and Means. In 1871-'75 he was a State Senator, and in 1874 was appointed major-general of the 6th Division, N. G. S. N. Y., comprising the militia in eleven counties.

Young, Alexander, journalist, born in Boston, Mass., May 19, 1836; died there, March 19, 1891. He was graduated at the Harvard Law School in 1862, and practiced law till about 1872, when he became assistant editor of the newly established Boston "Globe." He remained there five years, in the mean time contributing to periodicals and adopting the pen-name of "Taverner." Subsequently he was the Boston correspondent of the New York "Critic" and a writer for the Boston "Post," "The Independent," and "The Christian Union." He published "History of the Netherlands" (Boston, 1884), and at the time of his death had nearly completed a work on "Old Boston."

Zabriskie, Francis Nicoll, clergyman, born in Hackensack, N. J., in April, 1832; died in Princeton, N. J., May 13, 1891. He was graduated at the University of the City of New York in 1850, and at the Theological Seminary of the Reformed Dutch Church at New Brunswick in 1855. In 1856-'59 he was pastor of the Reformed Church at Livingston, N. Y.; in 1859-'63 at

Coxsackie; in 1863-'66 at Ithaca; in 1866-'72 at Chavert; in 1872-'76 at Saybrook, Conn.; and afterward, till his health forced him to give up the ministry, at Wollaston Heights, Mass. He was editor of "The Christian Intelligencer" in 1880-'83, and one of its weekly correspondents till shortly before his death, writing under the pen-name of "Old Colony." He also wrote regularly for "The Christian at Work," the New York "Observer," and other religious periodicals. Dr. Zabriskie published "Story of a Love," "Golden Fruit from Bible Trees," "Precious Stones," and a life of Horace Greeley in the "American Orators and Reformers" series (New York, 1890).

OBITUARIES, FOREIGN. A'Beckett, Gilbert Arthur, an English dramatist, born in London in 1837; died there, Oct. 15, 1891. He was the son of Gilbert Abbott A'Beckett, author of the "Comie Blackstone"; was educated at Westminster School and Christ Church, Oxford, and was a clerk in the treasury until he turned his attention wholly to literature. His dramatic pieces have been produced in all the principal London theatres. He was the author of many successful songs and of the librettos of "Canterbury Pilgrims" and "Savonarola," operas by Dr. Villiers Stanford, and with Herman Merivale he produced the poetic drama called "The White Pilgrim." He was also a composer of ballads, which were published under an assumed name, and for the last twelve years of his life he was one of the best-known contributors to "Punch."

Accolas, Emile, a French writer on jurisprudence, born in 1826; died in Paris, Oct. 17, 1891. He was secretary to the Democratic Committee of the Indre Department in the revolution of 1848, and was elected to the Legislative Assembly in 1849. He lectured on jurisprudence in France from 1850 till 1866, when he was condemned to a year's imprisonment for his open declaration in favor of a republic at the meeting of the Democratic Federation in Geneva. On his release he accepted the chair of Jurisprudence in the University of Bern. Returning to France after the fall of the empire, he endeavored to establish courses of lectures on law for working men. In 1876 he was supported by Garibaldi in an unsuccessful attempt to win one of the Paris seats in the Chamber. He founded "La Science Politique," a review, in 1878, and published "Cours Elementaire du Droit," "Droit et Liberté," an essay on paternity, and one on the religious and Papal question.

Agar, Florence Leonide Charvin, known on the stage as Madame, a French actress, born in Valence, Sept. 18, 1836; died in Algeria, Aug. 17, 1891. She went to Paris in 1858 and played in the music halls till she was advised to attempt tragedy, for which she was fitted by her strong and mobile face and her resonant voice. She made her *début* in "Phédre" at the Odéon and achieved an instantaneous success; then created brilliantly the *role* of Silvia in Cœpée's "Pus-sant," in which Sarah Bernhardt had a great success in the part of Zanetto. Madame Agar was admitted to the Comédie Française in 1871, remained two years, and after successful tours in the provinces and abroad she returned in 1878 to create one of the chief parts in "Fourchanbault," by Emile Augier, after which she left to star again.

Agop, Pasha Kassassian, a Turkish statesman, born in Constantinople in 1833; died there, Sept. 19, 1891. He was the son of a poor Armenian trader, and had not the advantage of an education. His first public appointment was a place on the police board of Galata. In 1873 he received a higher appointment, of which he was soon deprived on account of his religion, that of the orthodox Armenians. Becoming dragoman of the Ottoman bank, he made the acquaintance in his frequent calls at the palace of Osman Pasha, the Sultan's chamberlain, through whose protection he was nominated by the Padishah a Mu-dir of the Civil List in 1881, and quickly advanced to the head of this ministry and made a pasha. He was Minister of Finance for two months in 1888, and recalled to that post in 1889, holding it till his

death. He negotiated a loan with the German bank and arranged with Rothschild for the conversion of the priority and Salieh bonds. He left the impression on all who came in contact with him as Minister of the Civil List or Minister of Finance of a strictly honest man, whose single aim was to introduce order into the chaos of the Ottoman finances and the imperial civil list.

Alarcon, Pedro Antonio de, a Spanish novelist, born in 1823; died in Madrid, July 29, 1891. He was originally destined by his family for the priesthood, but followed an imperative literary impulse, and became a master in the art of writing novels and short stories. Many of his works of this description have been translated into nearly every language. His romances were not as good, and his essays in the drama were not very successful. He wrote also on political subjects without making an impression.

Alimonda, Gaetano, an Italian prelate, born in Genoa, Oct. 23, 1815; died in Rome May 30, 1891. He entered the priesthood at an early age, and became famous as a preacher throughout Italy; was created Bishop of Albenga in 1877, and on May 12, 1889, was made a cardinal, under the title of Santa Maria in Transpontina, by Leo XIII. In 1883 he was appointed to the metropolitan see of Turin.

Arco-Valley, Count Ludwig, a German diplomatist, born in Bavaria in 1845; died in Berlin, Oct. 15, 1891. He was educated at Munich, where he studied law in the university, and in 1867 entered the diplomatic service as secretary to the Bavarian legation near the Vatican. As a member of the Red Cross Association he was made a prisoner by the French, and would have been shot on suspicion that he was a spy had not the intervention of President Thiers been obtained. In 1871 he was sent to Washington as secretary of the German legation, and in the following year was transferred to Vienna, where he married the famous actress Janisch, which led to his temporary dismissal from the imperial service. After his separation from his wife he was again taken into favor, and served successively as secretary to the legations at Madrid, Paris, London, and the Quirinal; went to Cairo as consul-general in 1886; and in 1888 was appointed minister plenipotentiary and envoy extraordinary to the United States, an office that he still held at the time of his death.

Aube, Admiral, a French sailor, died in Toulon, Jan. 7, 1891. He was Governor of Martinique in 1879, and was called to the head of the Ministry of Marine in the following year. He held that huge ironclads were useless for maritime defense, and that they should be replaced by a system of torpedo flotillas and gunboats. While in office he instituted a new policy on these lines, but his successors have departed from his programme.

Balmaceda, José Manuel, ex-President of Chili, born in 1840; died in Santiago, Sept. 19, 1891. He came of an old and wealthy Chilean family, and was educated in the Seminario Conciliar of Santiago with the intention that he should follow the priestly vocation. For this he had no inclination, and after a lively youth he plunged into politics as soon as his studies were completed, joining the Club de la Reforma, composed of young men of advanced ideas, who discussed far-reaching schemes for liberalizing the Constitution of 1830. His gifts as an orator and capacity for leadership made him the dominant spirit in the club, and when he entered Congress at the age of twenty-eight he was already marked out as a coming political leader, and at once took a prominent part in the proceedings. Soon his eloquence and skill in debate won for him the place of parliamentary chief of the Liberal party, composed of the progressive young men of the country, who aimed at the extension of popular education as a preliminary step toward democracy. This was the dominant party in Congress, outnumbering the Conservative or Clerical party and the Nationals—who had co-operated in the anti-Clerical contest, but recoiled from democratic reforms—both combined. In advance of his party he advocated, in 1874, the

complete separation of church and state. After serving five terms in Congress he became Minister of the Interior in 1882, was subsequently a Senator, and as the most popular politician in Chili he was called into the Cabinet by President Santa Maria in 1885 as Minister of Foreign Affairs, as a candidate for the succession to the presidency. As Foreign Minister he added to his reputation, and when nominated for the presidency he was elected by an overwhelming majority, and on Sept. 18, 1886, was inducted into office. For the first three of his term of five years his party worked in complete harmony with him, and the country made great strides, political, social, and economical. Railroads were built, harbors improved, normal schools established, laws made more liberal, restrictions placed on the Church, and the popular approbation of the President was so unbounded that the opposition parties disappeared from the scene. When the time approached for choosing a successor to Balmaceda, who under the Constitution was not re-eligible, then the feuds between the rival candidates rent the party into factions; the powerful Conservative and National families and foreign capitalists whose designs he had crossed threw their influence on the side of the President's opponents; complaints of arbitrary conduct, religious oppression, personal wrongs, malversation and corruption, and interference with elections were raised. A bill was passed placing the electoral machinery under the control of the municipalities. The President vetoed this measure, and thus aroused a constitutional conflict between the executive and legislative powers ending in civil war (for the history of these events, see CHILI). When the Congressional party entered Santiago in triumph Balmaceda attempted to escape from the country on the torpedo vessel "Condell," but when he reached San Antonio Bay he found that she had sailed. He returned to Santiago, took refuge in the house of the Argentine minister, and two weeks later put an end to his own life by a pistol shot in the temple.

Banville, Théodore Faullain de, a French poet, born in Moulins in 1823; died in Paris, March 12, 1891. He was the son of a sea captain, and began to write poetry at the age of nineteen as a disciple of Victor Hugo and Alfred de Musset, but later preferred Greek models to the Romantics. He attained a success with his "Odes Funambulesques" in 1857, and awakened expectations that were not realized in his subsequent works, although he succeeded in various styles of poetry and in the drama.

Baring, Thomas Charles, managing director of the re-constituted firm of Baring & Co., English bankers, born in 1831; died in Rome, Italy, April 2, 1891. He was a son of Charles Baring, Bishop of Durham, was educated at Harrow and Oxford, becoming a fellow of Brasenose College, was made a partner in the firm of Baring Bros. & Co., married an American lady, and for some years was the representative of the Barings in New York. He represented the southern division of Essex County in Parliament from 1874 till 1885, and from 1887 till his death represented the city of London. He acted with the Conservatives, but seldom spoke. He published some books, including "Pindar in English Rhyme" and "The System of Epicurus."

Baudouin, Prince, heir to the Belgian throne, born in Brussels, June 3, 1869; died there, Jan. 23, 1891. He was the eldest son of Philippe, Count of Flanders, the brother of King Leopold, and was born in the same year in which the King's only son died. He was well-developed physically, pleasing in appearance and manners, attentive to his duties as a captain in the army, and already trained by the King to some extent in the duties of his future station, and his sudden death from pneumonia was a blow to the Belgian people, with whom he was popular. As the Constitution precludes women from succeeding to the throne, the only hope of the dynasty is in the remaining son of the Count of Flanders, Prince Albert, who was born on April 8, 1875.

Bayard, Émile, a French painter, born in La Ferté-sous-Jouarre in 1836; died in Cairo, Egypt, Dec. 9, 1891. He was a pupil of Cogniet. He became known as a painter of war scenes, exhibiting a picture of a field hospital and similar works. A sensational group representing a duel between women, exhibited in the Salon, was finally bought to decorate a bar-room in New York. He received the cross of the Legion of Honor in 1870, and a silver medal at the Universal Exposition of 1889. "The Day after Waterloo" was exhibited in 1875, and in 1877 he had in the Salon two admirable panels representing bathers and skaters. As a painter he had a wide reputation, and as an illustrator of books he attained the highest distinction. With De Neuville he drew the wood engravings for the "Tour du Monde," and in 1889 and 1890 he exhibited drawings for illustration in the Salon.

Bazalgette, Sir Joseph, an English engineer, born in 1819; died in London, March 15, 1891. He entered the engineering profession in 1840. When the Metropolitan Board of Works was created at the time of the Crimean War he was appointed its chief engineer, and he continued in that post during the thirty-two years that it was the controlling public body in London. Before he planned and carried out a uniform drainage system the sewage flowed into the Thames, from which the water supply was drawn. As designed by him, three main sewers—one at a high level, running through Hampstead and Highgate, one at a middle level under Oxford Street, and a low-level sewer along the bank of the Thames and through the city—unite below, and are carried to the common outlet at Barking. For the last, the Thames embankment was built. He designed the Battersea bridge, the free Woolwich ferry, and many other works of engineering.

Béhic, Armand, a French politician, born in Paris, Jan. 15, 1809; died there, March 3, 1891. He was a deputy in the time of the July monarchy, a member of the Legislative Assembly in 1849, and one of the Council of State under the presidency of Prince Louis Napoleon, who, after the *coup d'état*, appointed him Secretary of the Finance Department, and afterward director of the Messageries Maritimes until he was called to replace M. Rouher as Minister of Agriculture, Commerce, and Public Works in the Cabinet formed on June 23, 1863. On his recommendation the agricultural inquiry of 1866 was ordered. He gave in his resignation in 1867 and became a Senator. The fall of the empire sent him back to private life until, as an eminent member of the Bonapartist party, he was elected a Senator for the Gironde in 1876.

Bennett, Sir James Risdon, an English physician, born in Romsey in 1809; died in London, Dec. 16, 1891. He was the son of a clergyman, was educated by private tutors, and studied medicine in Paris and in Edinburgh, where he was graduated M. D. in 1833. After traveling through Europe he settled in London in 1835, lectured at Charing Cross Hospital, and became assistant physician in 1843, and afterward resident physician at St. Thomas's Hospital, where he lectured on the practice of medicine. He was one of the founders of the Sydenham Society for the publication of medical works; was lecturer for many years to the College of Physicians, which he represented in the General Medical Council, and from 1876 till 1880 was its president. He published a treatise on "Diseases of the Ear" (from the German work of Kramer), an "Essay on Acute Hydrocephalus," "Lumleian Lectures on Cancerous and other Intrathoracic Growths," and papers in "Transactions" of the Pathological Society and in periodicals.

Berchère, Narcisse, a French painter, born in Étampes, Sept. 11, 1819; died in Paris, Sept. 21, 1891. He first exhibited in 1844, and attained a high place among the painters of Oriental subjects, which his frequent journeys to Egypt, Turkey, and Palestine enabled him to handle with exceptional intelligence. He was a writer of ability also, and is best known by his book entitled "Le Désert de Suez."

Berg, Christian, a Danish statesman, born in Tjaltrung, near Lemvig, in December, 1829; died in Copenhagen, Nov. 27, 1891. He was the son of a farmer, and until he became prominent in politics he followed the profession of a teacher. He was elected a Deputy for Kolding in 1865, and in 1870 became one of the leaders of the Left. In 1877 he was chosen chief of the Radical Opposition. From 1881 he edited the party organ the "Morgenbladet." In 1883 he was elected President of the Folkething. His bold and aggressive attacks on the Estrup ministry caused him to be arrested in 1886 and sentenced to prison for six months. Chiefly through his energy the long struggle for parliamentary government and ministerial responsibility has been kept up till the present time.

Blavatsky, Helena Petrovna, a Russian philosopher, born in the south of Russia about 1820; died in London, May 8, 1891. She was descended on her father's side from a noble family in Mecklenburg and through her mother from the princely family of Dolgoruki. She was married at the age of seventeen to Baron Blavatsky, a seigniorian functionary holding a high office in Tiflis, but left him at the end of three months and traveled through Turkey, Greece, and Egypt. Afterward she lived a long time in the United States and Canada, studying the Indian race and traditions, and the mystic sects among the negroes. Going next to the East, she made an attempt to enter Tibet, and, failing in this, she traversed the British and Dutch East Indies, seeking to penetrate the mysteries of Buddhism and other Oriental beliefs. In 1855 she made another effort to reach the stronghold of Buddhism in Tibet, and by virtue of her courage and an Oriental disguise she succeeded, although her three companions were stopped. She underwent a hundred adventures in the deserts of that unknown country, and visited Turkestan also. After this she returned to the Caucasus, and then revisited Greece and Egypt, and in the latter country established a society for the study of modern spiritualism. Giving herself up to investigations of philosophy, psychology, and mysticism, she evolved a system of belief, and, in 1875, in conjunction with an American disciple, Col. Olcott, she founded the Theosophical Society, the curious tendencies of which in matters of religion and philosophy have attracted a great number of minds and have made many adepts. The esoteric doctrine of the sect that she founded, which looks to a sort of revival of Buddhism, she revealed in a voluminous series of works, the titles of which are: "Isis Unveiled," "The Secret Doctrine," "Synthesis of Science, Religion, and Philosophy," "Key to Theosophy," and "Voices of Silence." She also established a review in London, with the name of "Lucifer."

Bodichon, Barbara Leigh Smith, an English philanthropist, born in Watlington, Sussex, in 1827; died in Robertsbridge, Sussex, June 11, 1891. She was a daughter of Benjamin Smith, Liberal member of Parliament for Norwich; was unconventionally educated, and became at an early age a public champion of woman's emancipation and various social reforms, conducting, with Beattie Parkes, who became Madame Belloc, the "Englishwoman's Journal." In 1857 she married Dr. Eugène Bodichon, of Algiers, a distinguished French physician and writer, but did not cease to work for the improvement of the legal status of women. She joined Emily Davies in advancing a scheme in 1866 for the university education of women, which resulted in the establishment of Merton College. In 1869 she published the "Brief Summary of the Laws of England concerning Women," and the fruit of her efforts in this field was the married-women's property act. Madame Bodichon was an artist of considerable note. She exhibited in the Academy, the Salon, and elsewhere water colors in which the poetic qualities of natural scenery were brought out with original talent and power. She was George Eliot's bosom friend, and was intimate with many distinguished thinkers and poets.

Boisgobey, Fortuné de, a French novelist, died in Paris, March 4, 1891. He was the author of many

sensational romances in the vein of Gaboriau, which were exceedingly popular. His amiable qualities gained him many friends, and he took a lively interest in athletic sports. For some time before his death he was confined in an asylum.

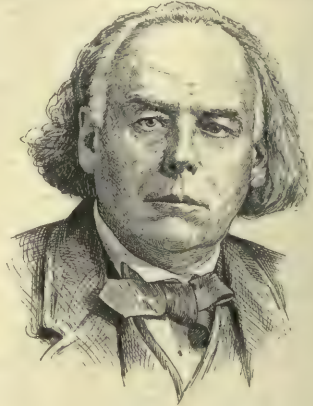
Bonaparte, Prince Louis Lucien, a French philologist, born in Thorngrove, near Worcester, England, Jan. 4, 1813; died in Fano, Italy, Nov. 4, 1891. He was the second son by his second wife of Prince Lucien Bonaparte, the elder brother of the Emperor Napoleon, who in consequence of a family quarrel was disgraced and excluded from the honors and dignities conferred on the younger two brothers and their descendants. The head of the family, which is the elder branch of the Bonaparte family and under the law of primogeniture would come first in the order of the imperial succession, is the late Prince Lucien's half-brother, Cardinal Bonaparte. Lucien was educated in England, where his father resided after the quarrel, and passed many years in the United States, devoting himself to linguistic studies and chemistry. In 1843 he was chosen a Deputy for Corsica, but the election was pronounced invalid. Soon afterward he was admitted to the Legislative Assembly as a Deputy for the Seine. He supported his cousin Louis Napoleon, and after the *coup d'état* was nominated a Senator and received the title of prince and the right to be addressed as Highness. Devoting himself chiefly to his philological and scientific studies, he published many memoirs and achieved a scientific reputation chiefly through his thorough investigation of the Basque language. He married Marianne Cecchi, the daughter of a sculptor of Lucca, in 1832, but lived apart from her for many years and left no children. His wife, Marianne Bonaparte, born in Lucca, March 27, 1812, lived in Ajaccio, Corsica, and died there on March 17, 1891.

Boulanger, Georges Ernest Jean Marie, French soldier and ex-Minister of War, born in Rennes, April 29, 1837; died in Brussels, Belgium, Sept. 30, 1891. (For a sketch of his life previous to his appointment to the Ministry of War and a steel portrait, see the "Annual Cyclopædia" for 1886.) He was popular with the soldiers of the army and known as their friend, though he had little fame outside when he was called to the Ministry of War in the Cabinet formed by M. de Freycinet on Jan. 7, 1886. He applied himself to improving the conditions of the soldier's life, obtaining the approbation of all who wished to see the army strong, and, aided by the friendship of his relative M. Clémenceau, was pushed forward into political prominence by the Extreme Left. Embracing this rôle, he took the lead in the measures for the expulsion of the Orléans princes, fought a duel with Baron Larcinty, and his growing popularity was scarcely injured by the publication of a servile letter that he wrote as a young officer to the Duc d'Aumale and the falsehood of his denial. As the organizer of democratic reforms in the army he enjoyed a well-earned popularity, which was crowned by the law substituting three years' universal service for five years with exemptions. He courted the admiration of the mob, was advertised by pictures and street songs, and when relations with Germany were strained by the Schnäbele incident, deliberately accepted the character of leader of *la revanche*. He remained at the War Office during the ministry of M. Goblet, but began to lose the support of M. Clémenceau and the more astute Radicals, and when M. Rouvier constituted his ministry his name was left out in spite of the threatening popular demand that he should be retained. When he challenged M. Ferry to a duel for calling him a "music-hall St.-Arnaud," he insisted on conditions that showed the purpose of killing the unpopular statesman in order to endear himself to the multitude. The turbulent cries for his recall placed him in the attitude of a revolutionist, and, deserted by the sober men of all parties, he entered into secret alliance with the various revolutionary groups—the Intransigents of M. de Rochefort, the League of Patriots of M. Déroutière,

the Anarchists, and, most important of all, with the Comte de Paris and the Orléanists, who furnished the money for the agitation by which he attempted to subvert the republic and become dictator. When the Limouzin scandal began he publicly charged the Minister of War with manufacturing it for the purpose of diverting public attention from him. For this he was ordered under arrest. Breaking his parole, he went to Paris during the presidential crisis, and might then have given the signal for an insurrection, but hesitated. The new President and his Cabinet were chosen for the special purpose of combating the danger of Boulangism. Adopting the cry for the revision of the Constitution, he organized a party and a political campaign with the money of the Duchesse d'Uzès and the Comte de Paris, was elected under the *scrutin de liste* with the aid of Royalist and Bonapartist votes, first in the Dordogne, and in April, 1888, by an enormous majority in the great Department of the Nord. In July his chances for the dictatorship were damped almost fatally by the outcome of a duel with M. Floquet, who had been insulted by him in the Chamber, in which the aged Premier almost killed the fire-eating soldier by a lunge in the neck. Noisy demonstrations and the arts of political advertisement restored his popularity, and his position was so strong when he presented himself as a candidate for the whole city of Paris in January, 1889, that he polled 245,236 votes to 162,875 given to the Republican candidate, M. Jacques. This was his second opportunity to play the part of a Bonaparte and seize the reins of power, but he lacked the courage or the sagacity to avail himself of it. M. Tirard formed a Cabinet with the avowed object of putting down Boulangism by new legislation if the existing laws were insufficient. M. Constans, the new Minister of the Interior, went to work boldly by suppressing the League of Patriots, and followed this up by secretly warning Gen. Boulanger that a worse fate than simple imprisonment was in store for him. Frightened by this vague intimation, the boastful representative of the military glory of France, to the amazement and disgust of all his partisans, fled in disguise to Brussels on April 2, 1889. The Senate was constituted into a high court of justice to try him and other fugitives for conspiracy and other crimes, and his friends adjured him to redeem his reputation by appearing at the trial. He was sentenced in *contumaciam* to imprisonment for life in a fortress. In the autumn a general election gave an overwhelming majority to the Republicans over the Boulangists and Monarchists combined. From a safe distance he continued to issue manifestoes, but his prestige was gone and most of the Boulangists who were not involved in his disgrace turned contemptuously away from him. The *scrutin de liste* imposed on the country by Gambetta was repealed. The prospects of the Comte de Paris were ruined by his perfidious alliance with Boulanger, and Prince Napoleon was implicated in a scarcely less degree, as was revealed in a series of articles published in the "Figaro" under the title of "Les Couilles de Boulangisme," by M. Mermeix, a Boulangist Deputy. Gen. Boulanger passed the remainder of his life in Jersey, London, and Brussels, and finally blew out his brains on the grave of Madame de Bonnemain, the companion of his flight and exile, for whom he had deserted his wife, and who had sacrificed her fortune in his cause. For a steel portrait of Gen. Boulanger, see "Annual Cyclopædia" for 1886, page 352.

Bradlaugh, Charles, an English statesman, born in Hoxton, Sept. 26, 1833; died in London, Jan. 30, 1891. He went to work at an early age in the law office where his father was a clerk, was later a wharf clerk, a coal dealer, a traveling salesman, and, above all, a zealous teacher, first of religion in a Sunday school, and then of free thought after he had become a disciple of Richard Carlile at the age of nineteen. He was driven by poverty to enlist as a soldier, was made orderly clerk, and in 1853 purchased his discharge, after which he found employment as a law-

yer's clerk in London and at the same time lectured on religious subjects. Becoming known under the name of "Iconoclast" as an aggressive atheist, he entered on a career of pamphleteering and lecturing that made him one of the most notorious and the most obnoxious men in England. His audacious and contemptuous treatment of sacred subjects was repul-



sive to many who thought as he did, and he had conflicts with the authorities and was mobbed by his audiences, winning all the time converts and admirers by his courage, his adroitness, and his powers of speech, especially when defenders of orthodoxy undertook to vanquish him in argument on the same platform. In the Hall of Science, where he made his speeches in London, and in the pages of the "National Reformer" he advocated secular education, disestablishment, and the abolition of monarchy and aristocracy, and unfolded a political programme parts of which he and his friends believed could be brought into practical politics. After several attempts to get a seat in Parliament he was at last elected for Northampton in April, 1880. He had been prosecuted at various times, and his natural acumen and legal knowledge had been sharpened by his experience in the courts, as when, in 1861, the superintendent of police at Devonport had interfered with his lectures, and when he was successful in defying the Inland Revenue officials who attempted to apply an obsolete law to the "National Reformer," and when, in 1877, he succeeded in quashing the indictment after he and Mrs. Besant had been condemned to six months' imprisonment and a fine of £200 for publishing the book called "Fruits of Philosophy." A large number of the older members of Parliament were determined that he should not be received, and many Liberals shared this desire with the Conservatives. When he first appeared at the bar of the House he claimed the right to affirm. The matter was referred to a select committee, which reported against his right to take advantage of the acts created for the Quakers and Jews. Thereupon he offered to take the oath of allegiance, but another committee decided that he was not competent, and the House passed a resolution denying his right either to make affirmation or to go through the form of taking the oath. When he refused to recognize the authority of the House he was removed by the sergeant-at-arms, at first with a show of force, but on a repetition of the proceeding he struggled fiercely to remain. Session after session the same scenes were repeated. On Feb. 21, 1882, he went up to the table, drew a Bible from his pocket, and, before the House knew what he was about, recited the form of the oath. Successively excluded, he was always re-elected by his constituents. Among the many lawsuits that grew out of this contest, he successfully won the one brought against him for sitting and voting without having taken the oath and the

one that he brought against Mr. Newdegate for intemperance. It was not till 1886 that he was allowed to take the oath and begin his career as a member of Parliament. Two years later he and his friends succeeded in having the oaths act so amended that atheists are permitted, on account of conscientious scruples, to affirm. In Parliament he disgusted his former followers among the working people by opposing the extension of employers' liability, the eight-hour day, and other labor measures. By this attitude he established a strong bond of sympathy with the people who had been his bitterest opponents, and as he did not obtrude his irreligious views and devoted his energy and ingenuity to advocating academical opinions that roused little antagonism, with able arguments free from irritating allusions, he won the respect of the sober members of both parties and was listened to with more attention than the other Radicals. His denunciation of the perpetual pensions and sinecures enjoyed by members of noble houses sustained his reputation as a democratic Radical. Later he devoted himself to the more ambitious task of representing in Parliament the desires of the Hindus for representative institutions, and was accepted by them as their special advocate, the "Indian member." Under his mentorship the Indian Congress enlarged the scheme of representative government that had already obtained the approval of some practical Anglo-Indian administrators, thus putting off its realization, but with a hope of winning a greater ultimate success through his powerful advocacy. Visiting India in 1889 in the hope of restoring his shattered health, he took part in the Congress held at the end of that year. Three days before his death the House of Commons, without a dissenting voice, expunged the resolution of June 22, 1889, which refused him permission either to take the oath or to affirm when he claimed his seat.

Bratiano, Joan, a Roumanian statesman, born in Bucharest in 1821; died there, May 16, 1891. He served a short time in the Roumanian army, went to Paris in 1841, and studied in the Collège de France and the École Polytechnique, fought for the republic with his brother Demetrio in the revolution of February, 1848, returned to Bucharest in the following April, was appointed one of the secretaries of the Provisional Government, and became a leader of the Democratic party that aimed to free Roumania from Turkish dominion and keep the state equally free from dependence on Russia. During the revolution he was Minister of Police. With his brother he was proscribed after the intervention of Russia; and, returning to Paris, he engaged in journalism. Being condemned to prison for revolutionary writings in 1853 for the term of three years, he wrote and brought out in 1855 a "Memoir on the Austrian Empire in the Eastern Question," and in 1857 he published a "Memoir on the Situation of Moldo-Wallachia after the Treaty of Paris." In this year he and his brother returned to Bucharest, and as Deputies in the Provisional Assembly both made a name as orators. In 1875, when the impending Servian war reopened the Eastern question, Joan Bratiano, at the head of the National party, aspired to gain for the Roumanian nationality its share in the division of the Turkish Empire. He became President of the Council and Minister of Finance in the Cabinet constituted on July 24, 1876, exchanging this portfolio for that of the Interior later. He brought about the proclamation of Roumanian independence on May 21, 1877, and was forced into the alliance with Russia and the declaration of war against Turkey. For twelve years, with an intermission of two or three months in 1881, when his brother took the premiership, he guided the affairs of Roumania, which was erected into a kingdom in 1881. In 1886 an attempt was made on his life, the motive for which was not discovered. He made enemies by his arbitrary methods, and in 1888 was overthrown by a coalition of Junimists, Conservatives, and Liberals.

Bronsart von Schellendorff, Gen., German ex-Minister of War, born in Dantsic in 1832; died in Berlin, June

23, 1891. He was descended from Huguenot emigrants to Prussia. Entering the army as an officer of the Guards, he was soon called to staff duty, and in this capacity he went through the Austrian campaign with the 2d Army Corps. In the war of 1870-71 he had charge of a section of the general staff and was King William's messenger to Napoleon when the white flag was hung out at Sedan. Gen. von Moltke intrusted him with many delicate missions. After the peace he served as chief of the staff of the Guards Corps, and in 1883 was selected on account of his resolute and aggressive qualities to succeed Gen. von Kameke as Minister of War. He overcame the opposition of the Reichstag to the addition of 46,000 men to the peace footing, and pushed through the measures for the organization and armament of the Landwehr and Landsturm, which practically doubled the fighting strength of the empire. He was succeeded in 1888 by Gen. Verdy du Vernois, and after a brief retirement took command of the 1st Army Corps, which active post he held at the time of his sudden death. It was generally supposed that if war should break out Gen. Bronsart would be made commander-in-chief of the German army.

Carl, Friedrich Alexander, King of Württemberg, born in Stuttgart, March 6, 1823; died there, Oct. 6, 1891. He was the son of Wilhelm I, the second King, and married on July 13, 1846, the Grand Duchess Olga, daughter of the Czar Nicholas. On the death of his father, on June 25, 1864, he ascended the throne under the style of Carl I. During the period when Prussia was working for supremacy in Germany he strove against the consolidation under Prussian headship, but abandoned his particularistic tendencies and all political activity when he saw that resistance was useless, leaving to his strong-minded wife the direction of court affairs and the forms of a sovereignty that had lost its substance. Trained in military routine in his youth, he conceived a strong dislike for martial pomp. Modest and simple in his way of living, genial and hospitable in disposition, winning in his manners, he was an intelligent patron and lover of art and literature, and did much to make Stuttgart one of the artistic and intellectual centers of Germany. He embellished the city architecturally, fostered music, drama, and science; and at one time gathered about him a circle of bright authors, which included Franz Dingelstedt, Friedrich Hackländer, and Moritz von Hartmann. Toward the end of his life he chose for companions some Americans who initiated him into the study of hypnotism and similar phenomena. These persons were looked on in court circles as adventurers, and the Queen intervened and after a contest removed the King from their influence. The successor to the throne is Wilhelm II, grandson of the late King's uncle, who was born Feb. 25, 1848, and married for his second wife Princess Carlotta of Schaumburg-Lippe in 1886. If he dies without male issue the throne passes to the Catholic branch of the family.

Carter, Henry A. F., Hawaiian minister to the United States, born in Honolulu, Aug. 7, 1827; died in New York city, Nov. 7, 1891. He was sent to an aunt in Boston, Mass., for his early education, afterward attended the schools in Hawaii, joined the gold seekers in California, but returned and became a clerk and afterward a partner in the mercantile firm of C. Brewer & Co. He took an active part in negotiating the reciprocity treaty with the United States, and when Minister Elisha H. Allen suddenly died, in 1883, Mr. Carter, who had held important posts in the Hawaiian Government, among them those of Minister of Finance and Minister of the Interior, was appointed minister at Washington. He labored to secure the effective working of the treaty, which went into effect in 1887, and after the adoption of the new tariff to obtain from Congress the passage of a resolution so construing the tariff act as to preserve the reciprocity relations with Hawaii. In 1885-'87 he went to Europe three times on special missions to the French and English governments.

Cellier, Alfred, an English composer, born in London in 1844; died there, Dec. 28, 1891. His parents were French. He was educated in London schools, entered the Chapel Royal in 1855, in 1862 was appointed organist of All Saints, Blackheath, and in 1865 became conductor of the Belfast Philharmonic Society and of the concerts in Ulster Hall in that city. He returned to London three years later, and was organist at St. Albans, Holborn, until he gave up the place in order to give his whole attention to the theatre. In 1871-75 he conducted an orchestra in Manchester, and in 1877-79 he led the orchestra of the Opera Comique, and alternated with Sir Arthur Sullivan at the Covent Garden concerts. His earliest operetta was "Charity begins at Home," produced in Manchester in 1870. There also he wrote for "Nell Gwynne" the music that was afterward adapted to the libretto of "Dorothy." His "Sultan of Mocha," the finest of his works, was brought out in Manchester in 1874, and, like these others, was reproduced later in London with another libretto. "Pandora," written for the words of Longfellow, was produced in Boston in 1881. His musical setting to Gray's "Elegy," written for the Leeds Festival of 1883, was not a popular success. Among his other works may be mentioned "The Tower of London" (1875); "The Specter Knight" (1878); "The Carp" (1886); "Mrs. Jarramie's Genie" (1888); and "Doris" (1889). His last work, "The Mountebanks," composed for a libretto by W. S. Gilbert, he worked on through the sufferings of his last illness. More happy in comic than in serious music, he enjoyed a wide popularity in Great Britain and America by reason of his neat and easy style of composition and his fertile and agreeable flow of melody.

Chapu, Henri Michel Antoine, a French sculptor, born in Le Mée, Department of Seine-et-Marne, in 1833; died in St. Germain, near Paris, April 21, 1891. He studied under Tradier, Duret, and Cogniet, gained the *prix de Rome* in 1855, and began exhibiting in 1863 with a statue of "Mercury." In 1875 and 1877 he carried off the first medal. He executed statues for the tombs of Henri Regnault, Leverrier, the Duchesse d'Orléans, and Flaubert. His busts of Théodore Rousseau and Millet are placed on a rock in the forest of Fontainebleau. A work of importance is the monument to M. Schneider at Creusot. Among M. Chapu's Salon exhibits were "The Oath" (1865); "Death of the Nymph Clytie"; "Joan of Arc at Donrémy," in plaster (1870) and in marble (1872); a bust of Dumas the elder for the Odéon (1876); "Thought"; a marble statue of Berryer for the Palais de Justice (1877); "The Genius of Immortality," for the tomb of Jean Reynaud (1880); "Hope" (1889); and a "Danseuse" (1890). M. Chapu was chosen a member of the Institute in 1880.

Chun, Prince, father of the Emperor of China, died in Peking, Jan. 1, 1891. He was the seventh brother of the Emperor Hien Fung, and with the Empress Dowager he carried out the palace revolution by which his infant son was proclaimed Emperor on the death of the Emperor Tung Chi, on Jan. 22, 1875. During his son's minority he performed important functions, and after the Emperor personally assumed the government, contrary to custom, he did not withdraw from all public duties, but held several high offices, the chief of which was the presidency of the Board of Admiralty. He was considered a man of liberal and progressive ideas.

Clam Gallas, Count Eduard, an Austrian soldier, born in 1805; died March 15, 1891. He commanded an army in the campaigns of 1848 and 1849, and for his successes received the Maria Theresa cross. In 1866 he was in command of the division that was overwhelmed by the Prussians at Gitschin, and for this disaster he had to stand a court-martial. Although he was acquitted and received a flattering letter from the Emperor, he was not consoled, and shortly afterward he retired from the army, refusing a pension.

Clam, Martiniz, Count Richard, an Austrian politician, born in 1832; died in Vienna, Nov. 15, 1891.

He was the leading representative of the group of Bohemian territorial proprietors in the Austrian Reichsrath and in the Diet at Prague. A thorough Feudalist and Clerical, he succeeded his more talented brother Heinrich as president of the club of the Bohemian Feudalists in the Diet, and was elected Vice-President of the Austrian Reichsrath. As the head of this group he exercised a great authority in political affairs, although he was not trained to politics but to military life, and took no part in political affairs until he retired from the army in 1879.

Coelho, José Maria Latino, a Portuguese statesman and scholar, born in 1825; died in Lisbon, Aug. 31, 1891. He first followed a military career, and rose to the rank of colonel. Then he gave his attention to mineralogy and geology, and was professor in the Lisbon Polytechnic School till his death. In addition to this, he stood at the head of the critics of Portugal, was permanent secretary of the Academy of Science, and took the chief part in editing the "Dictionary of the Portuguese Language." A member originally of the Liberal party, he discarded monarchical ideas, and by his attacks in the Cortes and the House of Peers on the prerogatives of the Crown, he acquired extraordinary popularity among the Democrats, and was the chosen leader of the Republican party. His critical and historical works and his editorial labors on Portuguese and Spanish newspapers made him pre-eminent among the intellectual leaders of Portugal.

Cogalniceanu, Michel, a Roumanian statesman, born in 1806; died in Paris, July 5, 1891. He was the son of a Boyar family of Moldavia, was educated under French and German tutors, headed the Jassy revolution of 1848, propagated his ideas in exile in Paris and Brussels, and was one of the chief factors in the amalgamation of the Danubian provinces, becoming President of the Council and Minister of the Interior for the first time in 1860. Resigning in the following January, he returned to the post as Prime Minister of united Roumania in 1863, and in May, 1864, in conjunction with Prince Kouza, carried out the *coup d'état* modifying the Constitution established by the Treaty of Paris. In the same year he abolished the *corvée*, secularized the property of the monasteries, deprived the Boyars of their privileges, divided their lands among the peasantry, declared the Church independent of the patriarchate at Constantinople, and by more of such arbitrary acts carried out other liberal reforms. Retiring from the premiership in 1865, he subsequently had charge of the Ministry of Foreign Affairs in 1868, 1876, and 1878, accompanying Joan Bratiano to Berlin to watch over Roumanian interests at the Congress, and was minister to Paris in 1880. He has since been active as a Deputy.

Constant Botelho de Megalães, Benjamin, a Brazilian statesman, born in 1838; died in Rio Janeiro, Jan. 22, 1891. He was the ablest and most devoted of the early Republicans, and while in charge of the Military Academy and Normal School at Rio he implanted his principles in the minds of the young men who were the chief agents in the revolution. The stroke by which Dom Pedro was dethroned was to a great extent directed by him, and in the organization of the Republican Government he was the most energetic and efficient. In the Provisional Government he was first Minister of War, then of Public Instruction, and as such he undertook a renovation and extension of the system of education befitting the new order. Transferred to the Department of Posts and Telegraphs, he carried into it the same reforming spirit, and his large ideas of progress and development were brought to bear on other departments of Government, causing some friction and dissatisfaction among the officials. He was afterward appointed Minister of War, and he held that post till two days before his sudden death. In the Brazilian Constitution it is provided that his house shall be acquired by the state, and preserved as a lasting memorial of the chief founder of the republic.

Coquilhat, Commander C., Vice-Governor of the Congo Free State, born in Belgium in 1853; died in

Born, March 24, 1801. He was one of the early officers of the International Congo Association, and was the first to plant the flag of the Free State among the cannibal Bangulas, on the upper Congo, who had given Stanley his hardest fight when he descended the river. Going to their country in 1884, he lived alone among these savages for many months, and laid the foundations for the prosperous Bangula station. He initiated them into habits of industry, persuaded them, in a great measure, to abandon their ferocious customs, and after he had been there a year he began to recruit soldiers and laborers for the service of the state, which now has 2,000 Bangula warriors in its army and draws its best steamboat hands and workmen from the same tribes.

Crampel, Paul, a French explorer, born in 1862; died in Central Africa, near the Ubangi river, April 9, 1891. He first went to Africa as secretary to M. de Brazza, Governor of the French Congo, in 1887. In the following year he explored the unknown region between the Ogowe and the Benito and Campo rivers, penetrating the country of the pygmies and making treaties of friendship with Pahouin chiefs, and emerged after severe privations at a French settlement on the coast, bringing back notes and collections, and impressed with the idea of opening up a way from the Congo to the region of Lake Chad, and the rich monarchies of the Soudan. Returning to France, he organized an expedition for this purpose. On Aug. 16 he set out from Brazzaville at the head of a caravan consisting of 5 Europeans, an Arab doctor and interpreter, 30 Senegalese soldiers, and 223 native porters. Advancing toward Baghirmi, he made many treaties. The country of the cannibals was much disturbed, and, after several conflicts, the party was surprised and massacred, with the exception of one Frenchman, and the rear guard.

Curci, Father Carlo Maria, an Italian priest, born in Naples, Sept. 4, 1809; died in Careggi, June 9, 1891. He was the son of a lawyer, who brought him up devoutly, and, joining the Jesuit society at the age of eighteen, he distinguished himself early by his ready pen and fluent eloquence, and obtained a reputation in the order for extensive learning. In 1847 he sprang into celebrity by a comprehensive and incisive answer to Gioberti's attacks on the Society of Jesus, contained in his "Jesuita Moderno," which was not calculated to conciliate the foes of the order. He founded the periodical called "Civiltà Cattolica." Taking a high rank among the intellectual representatives of the Church, he tried to win Pius IX over to a recognition of the new order of things, after the creation of the Italian Kingdom and the seizure of the Papal states. When Leo XIII became Pontiff, his idea of reconciliation had more chance of acceptance in ecclesiastical circles, and he published a plea for peace with the new Italy. The Pope would not let the audacious priest dictate his policy. The book was placed on the proscribed list, and Father Curci, in 1877, was expelled from the Society of Jesus. He made his peace with the Holy See by formally recanting his published views on the temporal power, but remained in retirement in his villa at Careggi, and passed his remaining years in preparing his "Memoirs of his Times" for publication. The completed part, which does not reach the later period of his life, has been published in Florence.

Czartoryski, Prince Constantin Marie Adam, Vice-President of the Austrian House of Lords, born in Passy, near Paris, April 9, 1822; died in Vienna, Oct. 30, 1891. He was descended from an ancient Polish house which once ruled over Lithuania, and was the great-grandson of Constantin Czartoryski, who obtained the intervention of the Empress Catharine in his efforts to establish a liberal system of government, which ended in the dismemberment of the kingdom. The deceased statesman was a life member of the Upper House of the Austrian Parliament, a Privy Councillor, and an influential representative of the Polish aristocracy, which has had a large share in shaping the policy of the monarchy.

Delaunay, Jules Elis, a French painter, born in Nantes in June, 1828; died in Paris, Sept. 3, 1891. He studied under Lamotte and Flandrin; won the *prix de Rome* in 1856, and on his return to Paris began to exhibit a series of works that have placed him in the highest rank of modern painters. Of these, "The Communion of the Disciples" and "The Plague at Rome" are in the Luxembourg. His portraits, notable among which are those of Madame G. Bizet, Charles Gounod, the actor Regnier, Gen. Melinet, and Henri Meilhac, are masterpieces in this branch of the art. He entered the Academy of Fine Arts in 1879. He was very successful in decorative art, and his work is found in the Panthéon, the Hotel de Ville, the Opéra, and the Sainte Trinité and other churches in and out of Paris. In 1881 appeared his remarkable illustrations to La Fontaine. In 1890 he exhibited in the Salon a portrait of Cardinal Bernadot, Archbishop of Sens.

Depeyre, Octave, a French politician, born in Cahors in 1812; died in Paris, Sept. 29, 1891. He was a lawyer by profession, and under the empire he rose to be Minister of Justice, and in that position gave many evidences of his intolerance. Under the republic he was a candidate for life Senator, and, being defeated, was chosen by a coalition of Bonapartists and Royalists to a nine years' seat, which he lost on the expiration of the term in 1879. Since then he has devoted himself to the interests of the Catholic University in Paris as a member of the executive board of directors, and to the defense of extreme Conservative ideas as political editor of the "Moniteur Universel."

Devonshire, William Cavendish, Duke of, born April 27, 1808; died in Milnthorpe, Dec. 21, 1891. He was the son of Lord William Cavendish, and in 1858 succeeded his cousin, sixth Duke of Devonshire, becoming head of the greatest Whig family of the British aristocracy. He married in 1829 Lady Blanche Howard, daughter of the Earl of Carlisle, who was related to him through her mother. His eldest son, born July 23, 1833, is Spencer Compton Cavendish, the Liberal statesman known under his title, Marquis of Hartington, who succeeded to the dukedom on the death of his father, and therefore was compelled to give up his position as leader of the Liberal Unionists in the House of Commons. The second son, Lord Frederick Cavendish, was murdered in Dublin by the Fenians in 1882. The late duke went to the University of Cambridge at the age of eighteen and was graduated with high honors, both in classics and mathematics. From 1829 till 1831 he represented the university in the House of Commons. In 1834, on the death of his grandfather, Lord George Cavendish, the first Earl of Burlington, he entered the House of Lords. He never took a prominent part in party politics or in the debates of the House of Lords. Subjects connected with physics and mathematics occupied much of his attention. His chief claim on public attention was through his vast industrial enterprises. The Cavendishes held large estates in the eastern counties in the time of the Plantagenets. Sir William Cavendish was raised to the peerage in 1605 as a baron, and created an earl in 1618, and the fourth earl was made a duke by King William in 1694 for political services. The property of the Dukes of Devonshire is one of the greatest in England, comprising 143,500 acres in Derbyshire, Lancashire, Sussex, and the south of Ireland, besides the greater part of the town of Eastbourne. The late duke formed large business plans before the possession of the family estates gave him the capital to carry them out. Through him was created the busy manufacturing and shipping town of Barrow-in-Furness. Eastbourne, the model watering-place, was also built up by his efforts. One of the greatest iron masters in Great Britain, he was chosen the first President of the Iron and Steel Institute.

Dolgorukoff, Prince Vladimir, a Russian administrator, born in Moscow, July 3, 1816; died in Paris, July 1, 1891. He was the head of one of the wealth-

jest and most distinguished families of the higher Russian aristocracy, and for many years was a soldier and served with honor in the Caucasus. After his retirement from the army he served the Czar Nicholas in delicate missions, was made Master of Provisions, was a member of the Council of War during the Crimean campaign, and in 1856 he was appointed Governor of Moscow, a post that is always held by a trusted confidant of the Czar. The expenses of this great station impaired his immense fortune, compelling him to borrow from Jewish bankers. When the recent Antisemitic troubles came on, and orders were issued for the removal of Jews from the interior to the Pale on the western frontier, he treated the Jews of Moscow with a leniency that drew on him the censures of the Nationalist party at the court and led to his dismissal in November, 1889, and the appointment in his place of the Grand Duke Sergius.

Dominis, John Owen, husband of Queen Liliuokalani of Hawaii, and Governor of Oahu, born in the United States; died in Honolulu, Aug. 27, 1891. He was appointed Governor of Oahu and Maui after his marriage to the Princess Liliuokalani, and was confirmed as governor of the former island, where the capital is situated, after her accession, on Jan. 20, 1891.

Dupuis, Adolphe, a French actor, born in 1825; died Oct. 25, 1891. He was one of the favorite actors of the Gymnase company, playing in an easy and natural manner and in a familiar, conversational tone of voice. He was one of the best interpreters of the rôles of Dumas *filis*, and was liked in the whole round of modern society dramas, but in the classical repertoire his efforts were not successful, and for this reason he was never called into the Comédie Française company. He went to the Vaudeville in 1873, and played with great applause in Brussels and St. Petersburg.

Dupuy, Antoine, a French historian, born in 1835; died in Brittany, July 22, 1891. He was the author of works on French history, chief of which is "Histoire de la Réunion de la Bretagne et la France."

Emine, Nikita Ossipovich, an Armenian historian, born in Djulfa, near Ispahan, Persia, about 1815; died in Moscow, Jan. 7, 1891. He was the son of wealthy parents, who sent him to Calcutta to be educated. Concluding from a catalogue that fell into his hands that the course of the Lazareff Institute for Oriental Tongues, in Moscow, was more complete than the similar schools in Calcutta afforded, he went to Russia, passed through the Lazareff Institute, and then the University of Moscow, in which he was one of the most brilliant students, and continued to reside in Moscow, where he was recognized as an illustrious scholar. Russian learning is indebted to him for many works, especially the translation into Russian of all the Armenian historians. In other countries he became known through his great work in French on the "History of Armenia."

Emmerich, Robert, a German composer, born in 1836; died in Stuttgart, July 11, 1891. He was director of the Choral Union of Stuttgart, and composed, besides other music, several operas, the most successful of which was "Der Schwedensee."

Fabrice, Gen. Georg Friedrich Alfred, Count von, Minister of War to the King of Saxony, born in Quesnoy, France, in 1818; died in Dresden, March 25, 1891. He was the son of a major in the Saxon army, whose regiment formed part of the army of occupation in France at the time of his birth. Trained for the military profession, like most of the men of his family, he rose to high rank, and when the Schleswig-Holstein campaign in 1863-64 called the Saxon army into action he acted as chief of staff; and again in the Bohemian campaign of 1866. Next he was made Minister of War, and during the Franco-German War he commanded the military district of the 12th Army Corps. During the occupation he was Governor of Versailles, and in June, 1871, he was reappointed Saxon Minister of War. In 1872 he was made General of Cavalry. He became Prime Minister in 1876, and in 1882 added to his other duties those of Minister of Foreign Affairs. He was created a count in 1884.

Faccio, Frano, an Italian musician, born in Verona, March 8, 1840; died in Monza, July 23, 1891. He was the son of a hotel waiter. Entering, in 1855, the Conservatory at Milan, he applied himself with such diligence that in a short time he became a good pianist, and composed meritorious pieces, some of them in collaboration with Arrigo Boito, who was a fellow-student. After traveling abroad for his improvement he wrote the music to the opera of "I Profumi Fiammenghi," and subsequently "Amleto" to a libretto by Boito. In 1872 he became leader of the orchestra of La Scala, and since the death of Mariani he has enjoyed the highest reputation of any orchestral leader in Italy. In 1889 he conducted the studies and arranged the *mise en scene* for the production of Wagner's "Meistersänger" at La Scala.

Félix, Celestin Joseph, a French preacher, born in Neuville, July 28, 1806; died in Lille, July 7, 1891. He was a farmer's son. He studied in the seminary at Cambrai; took holy orders, and at the age of twenty-seven joined the Society of Jesus. He began his career as a preacher in the Church of St. Thomas d'Aquin; went from there to St. Germain des Prés, and from 1853 till 1871 preached in the Cathedral of Notre Dame. He left the pulpit to devote himself to authorship, having already completed his great work entitled "Progrès par le Christianisme" and his "Jésus Christ et la Critique Nouvelle." The most celebrated of his other publications are essays on "Socialism and Society" and "Patriotism." For many years he was superior of the Jesuits' college at Lille.

Fothergill, Jessie, an English novelist, born in Manchester in 1856; died in London, July 30, 1891. She began writing at an early age, and "The First Violin," her best known work, was published in 1878. As a musical novel it is almost as celebrated as "Charles Ancherster." Other works of hers are: "Probation," "The Wellfields," "One of Three," "Made or Marred," "Kith and Kin," "Peril," "Healey," "Borderland," "The Lassies of Leverhouse," "From Moor Isles," and "A March in the Ranks" (1890).

Foucher de Careil, Count Louis Alexandre, a French diplomatist and author, born in Paris, March 1, 1826; died there, Jan. 10, 1891. He was the son of a French general descended from an ancient Breton family, and from him he inherited great wealth and large estates in the Department of Calvados. After a brilliant course at the university in Paris and travels in America and the Orient he gave himself up to literary and philosophical studies, and delivered lectures in Paris and published treatises on Leibnitz, Spinoza, Hegel, and Schopenhauer. His lectures were interdicted by the Imperial Government. He also took part in Catholic congresses, and was an unsuccessful candidate for the Corps Législatif in 1866 and 1869. During the Franco-Prussian War he superintended the ambulance service, for the Breton legions. Accepting the republic, he was appointed prefect of Côtes-du-Nord by President Thiers, and in May, 1872, was transferred to the prefecture of Seine-et-Marne. For this department he was elected Senator on Jan. 30, 1876, and with the Republican minority opposed the De Broglie ministry. On Aug. 3, 1883, he succeeded Count Duchatel as French ambassador at Vienna. His fortune enabled him to exercise a splendid hospitality in this post, which he resigned on June 26, 1886, on account of the decree of banishment issued by the De Freycinet ministry against the families that formerly reigned in France. A few days before his death he was re-elected Senator. He worked for many years on a new edition of Leibnitz's works, which he left unfinished, and in addition to his numerous essays on the philosophers he published books on Goethe and Dante and on political and social questions, and in 1868 and in 1875 two important treatises on workmen's dwellings and public buildings.

Fowler, Sir Robert Nicholas, an English politician, born in Tottenham, Sept. 14, 1823; died in London, May 22, 1891. He was of Quaker parentage, the only son

of a London banker, and was educated in University College, London, where he took his baccalaureate degree with high honors in 1848. He traveled in India and the British colonies, and then entered his father's banking house of Dimsdale, Fowler & Co., of which he was the senior partner until it consolidated with a kindred business recently and became Prescott, Dimsdale & Co. In 1865 he offered himself as a Conservative candidate for the city of London, which was then represented by four Liberals. He represented the Cornish boroughs of Penryn and Falmouth from 1868 till 1874, when he was defeated. In 1880 he was chosen as one of the four city members, and when the representation was reduced to two members he and Mr. Hubbard were returned, and he remained the senior member for London till his death. He was chosen alderman for the ward of Cornhill in 1878, was sheriff of London and Middlesex in 1880-'81, and in November, 1883, owing to some dissatisfaction with the alderman whose turn it was, he was unexpectedly elected Lord Mayor. His mayoralty was signalized by the number of entertainments that he gave, and still more by the discontinuance of the official attendance at St. Paul's and other forms and ceremonies connecting the municipal government exclusively with the state Church. Although a Churchman himself, he preached on Sundays in various dissenting places of worship. A few months after the expiration of his year of office, his successor having died, he was again elected by the Court of Aldermen, and after his double mayoralty he was made a baronet. He made a long visit to Australia and New Zealand, and after his return he resumed his active and zealous parliamentary career. In the proceedings of the House of Commons he took a prominent part, although he rarely made a set speech, except when the antiquated privileges of the livery and corporation were attacked, or when slavery or the protection of aborigines or other philanthropic objects with which he identified himself came under review, or when the opium question came up, or any of the Indian or colonial subjects that he had taken for his peculiar field of study were under discussion. He was, apart from his chosen hobbies, a thorough party politician, and did good service for the Conservatives by his parliamentary fencing. His part as senior representative of the city of London he performed with tact and dignity, winning the esteem of all parties. The narrative of his early travels he published under the title of "A Tour in Japan, China, and India" (London, 1876).

Freppel, Charles E., a French prelate and statesman, born in Obernai, Alsace, in 1827; died in Paris, Dec. 29, 1891. After receiving priest's orders he became Professor of Sacred Eloquence in the theological faculty at Paris, was Lenten preacher at the Tuileries in 1862, and canon of Notre Dame afterward. Called to Rome in 1869 to prepare documents to submit to the Council on the question of infallibility, he was nominated Bishop of Angers at the end of that year. He was selected as a Legitimist candidate in Finistère after the defeat of MacMahon, and was already a conspicuous public man, one of the most widely known of French ecclesiastics, when the voters of Brest in 1880 elected him to the Chamber of Deputies. At the time when peace was concluded he addressed an open letter to the King of Prussia, protesting as an Alsatian against the annexation of his native province. He entered into a controversy with Renan when the latter's "Life of Jesus" was published. In the Vatican Council he defended passionately the doctrine of Papal infallibility. On his first entrance into the Chamber the Right would have him addressed as "Monseigneur" and the Radicals as simply "Monsieur." M. Floquet found a middle way by saying, "*Monsieur l'évêque Freppel à la parole.*" The disputatious representative of the Church militant caught the ear of the Chamber without difficulty, and at once took his place as the principal leader of the Clerical forces. He was listened to eagerly by all parties because he was a

fascinating orator, a man of comprehensive culture, an earnest patriot, and almost the only one of the Chauvinistic advocates of revenge who was thoroughly familiar with Germany and German conditions. His speeches sparkled with wit and imagination, and were full of impassioned passages. He was a master of the oratorical art, and in debate no one was more ready or more cutting in his retorts, which were free from sting and always delighted the Chamber with their impromptu wit. Among his numerous published works, besides those already mentioned, are a book on the apostolic fathers and their epoch, one on Christian eloquence in the second century, one on the Christian apologists of that epoch, and a panegyric of Joan of Arc.

Gladstone, William Henry, an English politician, born in 1840; died in London, July 4, 1891. He was the eldest son of William E. Gladstone, and received his education at Eton and Christ Church, Oxford, where he took honors in classics. From 1869 till 1874 he was a Lord of the Treasury, having represented Chester in Parliament from July, 1865, till December, 1868, and Whitby from that date. In April, 1880, he was returned for East Worcestershire, and sat for that constituency till the next dissolution. His father, having become owner of Hawarden in 1874, conveyed it to his son in 1876, and as landlord of this property, covering four square miles, with a rent roll of £18,000 and valuable minerals underlying it, he served on the commission of the peace and for one term as sheriff of Flintshire.

Gontcharoff, Ivan Alexievitch, a Russian novelist, born in the government of Simbirsk in 1823; died in St. Petersburg, Sept. 27, 1891. He attained a great success with a novel called "An Ordinary Story" in 1858, which he followed up with "Oblomon" in 1859. A third work giving graphic pictures of Russian life in a pure and vivid style is "The Fall," published in 1870. As a commissioner in the voyage of the frigate "Pallada" in 1852-'54 he wrote a narrative of the circumnavigation of the globe.

Goodwin, Harvey, an English clergyman, born in King's Lynn in 1818; died in York, Nov. 25, 1891. He was the son of a solicitor, was educated by private tutors, entered Caius College, Cambridge, in 1836, was graduated as second wrangler in 1840, was elected a fellow, and was a tutor in his college, taking priest's orders in 1844, till 1848, when he was presented to the living of St. Edward's, Cambridge, where his sermons, characterized by what came to be known as "muscular Christianity," drew large congregations. In 1858 he was appointed Dean of Ely, and in 1869 he succeeded Dr. Waldegrave as Bishop of Ely. He was able to preach to working men and other popular audiences with more effect than his fellow-bishops, was a frequent speaker in the House of Lords, and in all practical questions of the day his influence was felt. He was a distinguished mathematician, and published a "Course of Elementary Mathematics" and treatises on statics and dynamics.

Graetz, Heinrich, a German Jewish historian, born in Xions, Posen, Oct. 31, 1871; died in Munich, Sept. 7, 1891. He studied Hebrew in his native town, was sent to the gymnasium at Oldenburg, and thence went in 1840 to the University of Breslau, where he was graduated in 1844. Two years later he published "Gnosticism and Judaism," and in 1853 was appointed Professor of Biblical Exegesis and Jewish History in the Hebrew seminary at Breslau. The Prussian Government sent him on a journey of exploration in Asia Minor and Egypt in 1872, and from the documents that he discovered he collected material for his great work on the "History of the Jews." He was a prolific writer and the editor of the "Monatsschrift für Geschichte und Wissenschaft des Judenthums."

Gravenreuth, Freiherr Carl von, a German colonial officer, born in Regensburg, Dec. 12, 1858; died in Buka, Cameroons, Oct. 19, 1891. The son of a Bavarian court official, he entered the army in 1877, and was commissioned 2d lieutenant in May, 1879. He

was one of the first German military officers to go to Africa, entering the service of the German East Africa Company in 1885. He was one of Major Wissmann's most trusted lieutenants, and was sent to Berlin to act as his representative, returning to Africa in 1890 to take a prominent part in the military operations for the suppression of the revolt of the coast tribes until he was forced by failing health to go back to Germany. There he was promoted to the rank of captain in September, 1890, and was employed in the Ministry of Foreign Affairs until in the beginning of the summer of 1891 he went out to Cameroons to explore the interior and lead a punitive expedition against the Abo tribe in the south. In storming their chief village, on the Sannaga river, he fell at the head of his black soldiers.

Granville, Granville George Leveson-Gower, Earl, an English statesman, born in 1815; died in London, March 31, 1891. After getting his education at Eton and Oxford he served a short apprenticeship in 1836 with his father, then minister at Paris, who was a



younger son of the Marquis of Stafford and who had been raised to the peerage for distinguished diplomatic services in 1815. Elected member of Parliament for Morpeth in 1837, he was made Under Secretary for Foreign Affairs in 1840, but was ousted before he became familiar with the duties of the office through the breaking up of the Melbourne ministry. Losing his seat, in 1841 he was returned for Lichfield, and made himself conspicuous by his vigorous

championship of free trade. In 1846 the death of his father transferred him to the more confined arena of the Upper House. He was made Master of the Royal Buckhounds and was more thought of as a courtier and dandy than as a serious politician. John Bright and other active Liberals raised a vigorous protest when Lord John Russell appointed the young aristocrat President of the Board of Trade in 1848. Lord Granville soon convinced them of his business capacity and energy. As Vice-President of the Commission for the International Exhibition a couple of years later he won golden opinions of all men, and especially charmed the French visitors by his graceful courtesy, thus helping to cement the *entente cordiale*. In 1851 he had a fleeting experience in the field of his true vocation as Minister of Foreign Affairs for a few months in the place of Lord Palmerston, whose independent course in recognizing Napoleon's *coup d'état* had given offense to Lord John Russell. In 1859, on account of the jealousy between the same two statesmen, Lord Granville was sent for by the Queen, but was saved the awkward task of forming a stop-gap ministry by Lord John Russell's consenting to serve under Lord Palmerston. He was chairman of the Royal Commission of the Exhibition of 1862, and was appointed Lord Warden of the Cinque Ports in 1865. When Mr. Gladstone formed a ministry in 1868 he was made Minister of the Colonies, and it fell to him to sanction the transfer to Canada of the Hudson Bay territory. It was his part also to defend the Irish Church bill and Mr. Gladstone's first land bill in the House of Lords, and in the debates he developed an unexpected power of lucid exposition and practical reasoning. The death of Lord

Clarendon brought him at last into the Foreign Office at the difficult juncture when the outbreak of the Franco-German War upset the European balance of power. His determination to maintain the neutrality of Belgium led to the confirmation of the agreement of 1839 by a new one between England, France, and Prussia. Refusing at first to consent to Russia's repudiating her engagement not to maintain a naval force on the Black Sea, he was constrained to agree to the abrogation of the treaty by a conference of the powers. In defending England against charges of violating the neutrality laws brought by both belligerents, he showed skill in the subtleties of diplomatic reasoning. When the vanquished French appealed for active intervention, he used his good offices to arrange an armistice, protested against the bombardment of Paris, and exerted himself to bring about a conference between M. Thiers and Count Bismarck. In 1872 he had to arrange the terms of a new commercial treaty with France. He firmly refused to allow the indirect claims to go before the Geneva arbitrators of the Alabama question; but the outcome of the arbitration was nevertheless regarded as a humiliating defeat to English diplomacy. His opponents charged him with weakness, too, when Russia disregarded his protests concerning Khiva and Afghanistan. The Conservatives returned to power on Feb. 21, 1874, and for the next six years it was Lord Granville's part to criticise the Earl of Beaconsfield's imperial policy and to defend his own more cautious and pliant methods. When the Liberals won the elections of 1880 the first consulted with him because Mr. Gladstone had ostensibly resigned the leadership after the defeat of 1874; but it was Mr. Gladstone that the country wanted, and Lord Granville returned to the Foreign Office. The Liberals had scored oratorical triumphs while in opposition by deriding and denouncing Lord Beaconsfield's imperial foreign and colonial policy and exposing its folly and danger, yet as soon as they attempted to reverse it and pursue a purely domestic policy, on the old Liberal principles of peace, retrenchment, and reform, they found themselves at war with the tendency of the time and the dominant forces of English opinion; for the public mind, dazed and disturbed at first by Beaconsfield's startling performances, became more convinced of the glory and success of his bold assertion of England's strength, and demanded that his successor should not sacrifice the position that he had achieved. The Cabinet was caught in the eddies of conflicting currents, and its members were divided in opinion on foreign questions. Its external policy was therefore confused, inconstant, and vacillating, and Lord Granville, whose diplomatic suppleness and dexterity were devoted to harmonizing discordant elements at home, brought English diplomacy into contempt abroad, and involved the country in more estrangements, difficulties, rebuffs, diplomatic failures, and losses of blood and treasure than the spirited policy of his predecessor had done. The Boer War was not of his seeking, and in making peace he followed the settled lines of Liberal policy in South Africa that had already received the approval of the country, only to find that the fickle public, dazzled by the dreams of imperialism, deemed it a disgrace to scuttle after the Majuba Hill disaster to British arms. The effect of this verdict was seen in the confused record and inexplicable vacillations of the divided Cabinet during the course of the Egyptian difficulty. First acting with France in the joint note, then bombarding Alexandria in order to leave France in the lurch, then winning the cheap glory of the Tel-el-Kebir campaign, suppressing the *de facto* government and seizing the country under specious pretenses, the broken pledges of evacuation, and the whole history of hypocrisy and deceit, are only explained by the exigencies of party politics and the discords of the Cabinet. The shameful record of the Sudan difficulty, ending with the sacrifice of Gen. Gordon and the retreat of the British, and then the perplexities of the Suez Canal question and the open

branch with France on the subject of the reduction of the interest on the Egyptian debt, were not due to Lord Granville's weakness, but rather showed his courage in shouldering the blame for the errors of a distracted Cabinet striving to steer through parliamentary crises and hold the inharmonious elements of the party together. Prince Bismarck, who spoke with undisguised contempt of Lord Granville's foreign policy, which he made his standing illustration of the follies of parliamentarism, prepared new difficulties for the British Cabinet after it had shown its complaisance in regard to Angra Pequena and Cameroons, and Earl Granville found his ingenious pleas and diplomatic refinements unavailing when the angry colonists of Cape Colony and Australia accused him of sacrificing their interests to the Germans on the southeast and southwest coasts of Africa and in New Guinea and to the French in the New Hebrides. The cry was echoed in Great Britain, and to avoid the reproach Lord Granville was compelled to take up an imperial policy of action. The Penjdeh surprise, which nearly precipitated a war with Russia, brought his difficulties to a climax, and in consequence the ministry invited an adverse vote on a financial issue and thus deliberately handed over the Government to the Conservatives in order that they might guard the interests of England by their approved methods. In the following year, 1886, Mr. Gladstone was again Premier for six months, but Lord Granville took the Colonial Office, letting Lord Rosebery administer the foreign policy in a way more in harmony with imperialist ideas. Although he was *persona non grata* to the colonists, his administration led to no new difficulties. Lord Granville retained his position of Liberal leader in the House of Lords to the end of his life, and amid all the perplexities of his party, whether in office or in opposition, his patience, assiduity, good temper, unflinching tact, and ready wit, smoothed away many difficulties that arose for the Liberals.

Green, Sir William Kirby, an English diplomatist, born in Nauplia, Greece, in 1836; died in Morocco city, Feb. 25, 1891. Members of his family have held British consular posts in the Levant for generations. His father was Sir John Green, for many years consul-general at Bucharest. The son was educated in the East, and in 1856 became secretary to the consul-general for Egypt. In 1859 he became secretary to Sir John Drummond Hay, envoy to Morocco, and for ten years he filled a variety of consular posts in that country. Going to Tunis as acting consul-general in 1869, and thence to Damascus, Beyrout, and Scutari in succession, he was appointed in 1879 consul-general to Montenegro. During the agitation of Bulgarian atrocities and the Eastern question he maintained in his reports, in common with other consular officials, that the troubles were due as much or more to Christian misdeeds as to faults of the Ottoman Porte or Turkish governors, and thus his name came frequently before the public. In 1886 he succeeded Sir John Drummond Hay as minister to Morocco and consul-general at Tangier. His knowledge of Oriental languages was unsurpassed, and his early familiarity with Arab life and character and the diplomatic methods of the Moors enabled him to extort various concessions from the Sultan. He died suddenly while carrying out a special mission to the Moorish court.

Gregorovius, Ferdinand, a German historian and poet, born in Neidenburg, East Prussia, Jan. 19, 1821; died in Munich, May 1, 1891. The son of a legal magistrate whose ancestors, of Polish descent, had been Protestant clergymen for several generations, he studied first theology in the Königsberg University, and from this turned to literary history and philosophy, and to the life of past ages vividly impressed on his mind by the old castle of Neidenburg restored by his father and by the historical traditions of Poland. His first essay in literature was the romance "Werdomar und Wladislaw aus der Wüste der Romantik" (1845). His sympathy for the unhappy Poles impelled him to write a book on the sorrows and

hopes of their nation entitled "Die Idee des Polenthums," which he intended to follow up with a larger work on Poland. The aspirations of the Magyars also attracted his sympathy, and in 1849 he published a book on Hungary. In a critical analysis of Goethe's "Wilhelm Meister," published in the same year, he unfolded his own social philosophy. Soon he was found immersed in the study of Roman times. In 1851 he published a history of the Emperor Adrian and his epoch and a tragedy on the "Death of Tiberius." In 1852 he wandered over Corsica in the summer and in the winter he made his first visit to Rome. For many years he lived in Italy, and in later life, after 1875, alternately in Rome and in Munich. Making himself familiar with every spot in Rome and its vicinity and in all parts of Italy, he introduced the method of presenting scenes of history with graphic detail in their proper landscapes. His descriptive talent, as well as his skill in antiquarian and historical research, was revealed in his book on "Corsica," first published in 1854, which in the enlarged edition (1865) is a complete monograph on the island and its people, and their customs, ballads, and dirges. In 1856 he issued a translation of the poetry of the popular poet of Sicily, Giovanni Meli, and the poem "Euphronion," depicting the destruction of Pompeii. His first work on Rome was a little book describing the tombs of the Popes, with historical comments. The most admired of all his works is the "Wanderjahre in Italien," describing the scenery and life of Italy and the historical associations of every locality, of which the first volume appeared in 1856 under the title of "Figuren: Geschichte, Leben und Scenerie aus Italien." The most learned is his "Geschichte der Stadt Rom im Mittelalter," relating the history of Rome from its conquest by the Visigoths to its occupation by the soldiers of Charles V. The first two volumes of this great work were published in 1859, and the third in the following year; the eighth and last in 1872. It combines the history of the city and its people with that of the Papacy. After its completion he published an historical biography, "Lucrezia Borgia," clearing away some of the fables connected with her by the aid of documents discovered in Mantua and Modena. The fifth volume of his "Wanderjahre," dealing with Apulia, appeared in 1877. In 1880 he edited the letters of Alexander to Wilhelm von Humboldt, after which he undertook a journey to Greece and the Orient. A monograph on "Athenais" and historical and descriptive sketches of Athens, Corfu, Palestine, and other places, a collection of which was published in two volumes in 1887-'88, were only introductory to his second important work, "Geschichte der Stadt Athen im Mittelalter" (2 vols., 1890).

Grimwood, Frank St. C., an Anglo-Indian official, born in England about 1855; died in Manipur, March 25, 1891. He was educated at Winchester school and Merton College, Oxford, and was appointed to the Indian service after passing the open examination in 1874. He was employed as a district officer in Bengal and Assam, and finally was sent to Manipur as political agent. Living there with his wife apart from all European companionship, he abandoned the stiff demeanor usually observed by Englishmen in their relations with natives, and entered into friendly social intercourse with the members of the reigning family, who fill all the principal posts in the Government at Manipur, and especially with the Senaputty. For this reason his advice was disregarded by Mr. Quinton, his superior, who came to depose the Senaputty, and thus resulted the catastrophe in which both lost their lives.

Hare, Thomas, an English political writer, born in 1806; died in London, May 6, 1891. He was called to the bar in 1823, acquired an equity practice, and published reports and treatises dealing with this branch of the law. In 1853 he became a charity inspector. A pamphlet on "The Machinery of Representative" attracted so much attention in 1857 that the author devoted himself to the preparation of a

larger work, which appeared in 1859 under the title of "The Election of Representatives, Parliamentary and Municipal," more familiarly known as "Hare on Representation." In it he unfolded a scheme of preferential and proportional representation, designed to secure the separate representation of various interests and give minorities a proportional voice in governing bodies, which gained and still has advocates in many countries.

Haussmann, Baron Georges Eugène, a French administrator, born in Paris in 1806; died there, Jan. 11, 1891. His father served under Napoleon in the commissariat department, was made a baron, and became a journalist and writer on agriculture. The son studied in the Conservatoire with the idea of becoming a singer, afterward qualified for the bar, and then entered the civil service; was a subprefect at Nérac and other places from 1833 till 1848, then prefect successively of the Var, the Yonne, and the Gironde, and in 1853 was made prefect of the Seine and transferred to Paris, where he planned and carried out vast works for the sanitation, betterment, and embellishment of the capital, including the improvement of the Bois de Boulogne and the park of Vincennes, the establishment of public gardens, the prolongation of the Rue de Rivoli, the cutting of new boulevards, the construction of barracks, churches, bridges, fountains, theatres, the new opera house, etc. Besides these splendid works he transformed the system of sewers and water supply, the hospitals and asylums, and the markets and slaughter-houses. He was first called to Paris as a partisan of Louis Napoleon, for whom he had prepared an enthusiastic reception when prefect at Bordeaux. As soon as he was installed in the Hôtel de Ville he sent for M. Alphand, an engineer at Bordeaux, who worked out in technical detail his gigantic scheme for rebuilding Paris. The Emperor authorized the enormous expenditure, and entered heartily into Haussmann's plans, and the public bore the heavy burdens willingly. Nothing did more to make the empire popular than the splendors of the new Paris, which were imitated in other cities. The transformation was not accomplished without doing violence to private rights and public laws. Still, the illegalities and irregularities of the expedients were condoned until the empire lost its prestige. Jules Ferry's pamphlet entitled "Comptes Fantastiques de M. Haussmann" (1868), a parody on the "Comptes Fantastiques de Hoffmann," was a telling diatribe against the financial jugglery. The Cour des Comptes objected to some of his devices, forcing M. Haussmann to request that the Paris budget be submitted to the Chamber, and when M. Ollivier formed a Liberal ministry in January, 1870, he was dismissed, since he refused to resign. He enjoyed a pension of 6,000 francs for the rest of his life. His popularity long outlasted the empire. He was a Senator from 1857 till the fall of the Empire and a Bonapartist Deputy for Corsica from 1877 till 1881. In 1871 he was appointed director of the Crédit Mobilier, and did much to restore the credit of that concern.

Hawkshaw, Sir John, an English engineer, born in Leeds in 1811; died in London, June 2, 1891. He was a pupil of Alexander Nimmo, and in 1831 he went to manage the Bolivar copper mines in South America. Returning to England at the end of three years, he became engineer of the Manchester and Bolton canal and railway, and constructed nearly the whole of the system, now the Lancashire and Yorkshire. So early and great a success led to his being associated with many important undertakings. His chief work was the Severn tunnel, which was thirteen years under construction and would have been abandoned on account of the constant and copious inflow of water by any engineer less ingenious and persevering. He was President of the Institution of Civil Engineers in 1862-'63, was knighted in 1873, and presided over the British Association at Bristol in 1875. In 1870 he first broached the project of a Channel tunnel. The Penarth harbor and dock in Cardiff Roads, the Londonderry bridge, the line of railway between Charing

Cross and Cannon Street with the two bridges across the Thames, the East London Railway, the Albert Dock at Hull, and the foundation of the new forts at Spithead are among Sir J. Hawkshaw's many memorable works in England; while of those which he constructed elsewhere the most important are the Riga and Dünaaburg and the Dünaaburg and Witepsk railways in Russia, the Government railways in Mauritius, and the great ship canal from Amsterdam to the North Sea.

Haynald, Ludwig, a Hungarian prelate, born in Szeeseny, Oct. 3, 1816; died, July 4, 1891. He was brilliantly accomplished and held a high rank in Hungary, not only as an ecclesiastic, but as a statesman, a diplomatist, an orator, a scholar, and an author. Becoming Bishop of Siebenbürgen in 1852, he had a conflict with the Austrian Government in 1862 over the question of reorganizing a separate Transylvanian Diet, and as he persisted in declaring it unconstitutional he was deposed and went into exile, being appointed by the Pope Archbishop of Carthage. When dualism was established in 1868 he returned to Hungary, and soon afterward was made Archbishop of Kalocsa, one of the very wealthy sees. In 1869 he acquired European notoriety by opposing in the Roman Council the doctrine of infallibility. He was created a cardinal on May 12, 1879. He gave largely out of his revenues for charitable and educational purposes, established the Haynald fund for the advancement of science and literature, which has expended 5,000 florins for endowments, and gave to the National Museum his library and celebrated herbarium. Cardinal Haynald was Tisza's confidential adviser in ecclesiastical affairs and an intermediary in delicate negotiations with the Vatican and the court at Vienna. He presided ten times over the Hungarian delegation.

Hennessy, Sir John Pope, an Irish administrator and politician, born in Cork in 1834; died in Youghal, Oct. 7, 1891. He was the son of an Irish landlord, and was educated at Queen's College, Cork, and called to the bar in the Inner Temple in 1861. Two years later he presented himself on an original platform, calling himself a Catholic Conservative, to the constituency of King's County, and was elected to Parliament. He was an active and efficient supporter of the Conservative party, and moreover interested himself in the mines' regulation bill and other philanthropic measures, proposed the reclamation of bogs for the benefit of the poor of Ireland, and earned the gratitude of the Catholic, by carrying through the prison ministers' bill. On English Church questions he supported the Government, while attacking the system of national education introduced into Ireland. His rebellion against party discipline in this and other matters led to his being relegated to the colonial service. He was sent first to administer Labuan, and from there to West Africa, a year later to the Bahamas; and thence to the Windward Islands. Sent next to Hong-Kong, where his sympathy for the natives got him into trouble with his superiors, who transferred him to Mauritius with still more awkward consequences. Espousing the cause of the Catholic French creoles, he became involved in a conflict with Clifford Lloyd, his secretary, and Sir Hercules Robinson, who was sent to arbitrate, gave him a nominal but not a real justification. Retiring on a pension he returned with health broken by his long residence in tropical climes, but his old restless thirst for action, and soon plunged into the Irish muddle by accepting the Clerical Anti-Parnellite nomination for North Kilkenny. He was elected by a majority of two to one, but took little part in the debates of Parliament.

Inglis, John, a Scottish jurist, born in Edinburgh in 1810; died at his country seat near that city, Aug. 20, 1891. He was the son of a Presbyterian divine. After passing through the Edinburgh High School, he went to the University of Glasgow, and thence to Balliol College, Oxford, where he was graduated B.A. in 1834 and M.A. in 1837, having in the mean time been admitted, in 1835, to the Scottish bar. He rose with great rapidity, and in 1852 his rank was such that he

was made Solicitor-General and afterward Lord Advocate. In 1858 he was restored by the Conservatives to the post of Lord Advocate and entered Parliament as a member for Stamford. He secured the passing of the Scottish universities act of 1858, and was chairman of the committee appointed to bring the new system into operation. He was raised to the bench in 1858 as Lord-Justice Clerk, and in 1867 was appointed Lord-Justice General. In the twenty-two years during which he presided over the Court of Session he added to the reputation of Scotch justice by his grasp of legal principles and his exact and comprehensive knowledge of law. His decisions are cited as high authority in British courts.

Janssen, Johannes, a German historian, born in Nanten, Rhenish Prussia, in 1829; died in Frankfurt, Dec. 24, 1891. His principal work was a "History of the German People before the Reformation," in which he attempted to refute the Protestant historians of Germany by showing that the Germans were prosperous and happy, and rapidly advancing in civilization, until the ecclesiastical revolt of the Reformation, and the chaotic moral and intellectual conditions that resulted from it interrupted the movement.

Kalakaua I, David, King of Hawaii, born Nov. 16, 1836; died in San Francisco, Jan. 30, 1891. He was the eldest son of Kapaakea and Keohokalole, niece of



Kamehameha I, and was elected to the throne by the Hawaiian Parliament to succeed Lunalilo I, on Feb. 12, 1874. He was of pure Hawaiian blood, and sprang from a collateral branch of the ancient royal family. He was an intelligent and progressive ruler, who was popular and able to guide the country until his fondness for pleasure caused him to neglect his duties and involved him in pecuniary difficulties. A revolutionary movement in 1887 resulted in his granting a new Constitution which curtailed the royal prerogative.

Keene, Charles S., an English comic artist, born in Hornsey, in 1823; died in Hammersmith, Jan. 4, 1891. He received his education in the grammar school in Ipswich, and went into the office of his father, who was a solicitor, but his natural bent for art was so strong that he was apprenticed to a firm of wood engravers, for whom he drew illustrations for "Robinson Crusoe" and other works. After he left them he contributed drawings to the "Illustrated London News" and to "Once a Week," in which he illustrated Charles Reade's "The Cloister and the Hearth" and "He would be a Gentleman," and in 1850 he began to make initials and tail-pieces for "Punch." Except in a life class he had no instruction in art. After John Leech's death he became one of the principal "Punch" artists, and was the most popular of them all. His sketches, which were drawn with pen and ink, caught the characteristic foibles and types of the common people and the commercial class, and dealt with such ridiculous incidents as are of daily occurrence.

Kinglake, Alexander William, an English historian, born near Taunton, Somersetshire, in 1811; died in London, Jan. 2, 1891. Horsemanship and a love of Homer were inculcated by his mother in his childhood. After leaving Eton College he traveled in the East. He was called to the bar in 1837; but he gave little attention to the practice of law, being the heir of wealth and able to follow his literary and political ambitions. "Eothen," a volume of fresh and vivacious sketches of travel, the fruit of his first journey in the East, he withheld from publication for nine years. When it appeared, in 1844, in its revised and polished form, the author's reputation was at once established among cultivated readers. Kinglake entered Parliament in 1857 as a Liberal representing Bridgewater, a borough in his own county. He had hardly sat in the house a year when he moved an amendment to the conspiracy act in a speech marked by eloquence and forcible reasoning, which failed of their due effect by reason of the feebleness of his voice and his unimpressive manner. These defects prevented him from taking the high place that he hoped to achieve. He was the champion of the crew of the "Cagliari" who had fallen into the hands of the tyrannical Government of Naples, and of the crew of the "Charles and George" detained by the Portuguese in violation of international law, and in other cases came forward as an assailant of injustice and oppression. The acts of Napoleon III were often the subject of his denunciations, which were directed against the annexation of Nice and Savoy in 1860 with special vehemence. Kinglake was a friend of Lord Raglan, the commander-in-chief of the English forces in the Crimea, and as a student of military science he accompanied the invading army, was present at the battle of Alma, and watched the earlier development of the siege operations at Sebastopol. Already in 1845 he had obtained a practical acquaintance with warfare by riding with the flying columns of St. Arnaud in Algeria and witnessing the devastating campaign against the Kabyles and Arabs. Naturally Lady Raglan selected him to be the historian of her husband's deeds, confiding to his hands in 1856 all the letters and papers in her possession relating to the Russian war. His "History of the Crimean War," which is a memoir and panegyric of the British commander as well as a history of political and military events, completely occupied half his life. The first volumes appeared in 1863, and the last volume only a few years before his death.

Krnedner, Baron Nicholas Pavlovich, a Russian soldier, born in Livonia in 1812; died in Warsaw. He was descended from a noble family of the Baltic provinces, and was educated for the military profession in the Nicholas Engineering School. In the Russo-Turkish campaign, at the head of the 9th Army Corps, he took the almost impregnable fortress of Nicopolis, on the Danube, on July 15, 1877. Previous to this he had directed the bombardment of Nicopolis, and executed the feint by which the Turks were induced to concentrate at this point while the Russians crossed the river, on June 26, at Sistova. His laurels were dimmed for a time by the panicky retreat of the Russians from Osman Pasha at Plevna, which resulted in their being besieged for four months. Beyond the Balkans he gained fresh renown, and led the force that occupied Philippopolis.

Kuenen, Abraham, a Dutch Biblical scholar, born in Haarlem, Sept. 16, 1828; died in Leyden, Dec. 10, 1891. He passed through the Gymnasium at Haarlem, studied theology at the University of Leyden from 1846 till 1851, and having made a reputation as a Hebrew scholar was appointed extraordinary professor in 1853 and Professor of Theology in 1855. His "Liber Geneseos" (1851) and his "Liber Exodus et Leviticus" were based on the study of a Samaritan version of the Pentateuch. A minute and indefatigable examination and comparison of the texts led him to conclusions different from those of Ewald and the Tubingen school. His great work entitled in English "A Historico-Critical Investigation of the

Origin and Collection of the Books of the Old Testament" (1861-'65) marked a new departure in the method and results of Biblical investigation; and it was greeted as an important contribution to theological science even by those who rejected his conclusions. Dr. Colenso, whose opinions as to the age of the Pentateuch were confirmed, translated the first part into English. The whole work was translated into German and French, and liberal theologians everywhere accepted it as a panoply for the fight. Of scarcely less influence were his subsequent works on "The Worship of Israel till the Overthrow of the Jewish State" and "The Prophets and Prophecies of Israel," both of which have been rendered into English. All three works tend to bring out in relief the connection between Judaism and the surrounding nations and the historical continuity of the national life. Dr. Kuenen presided over the sixth International Oriental Congress in 1883, and he received all the honors that the university could bestow on him.

Labastida y Davalos, Pelagio Antonio de, Archbishop of Mexico, born in Morelia in October, 1815; died in the city of Mexico, Feb. 5, 1891. He studied for the priesthood in the seminary of his native place, received holy orders in 1839, and was consecrated Bishop of Michoacan in 1855. He was a strong Conservative in politics, and when the Liberals triumphed in 1857 he went to Rome, where he was consecrated Archbishop of Mexico by the Pope. In 1859, when the Conservatives obtained the ascendancy, he returned, and was active in the movement for calling Maximilian to Mexico as Emperor. He officiated at the coronation, and exercised a strong influence on the political events of the empire. Juarez exiled him in 1867, and he lived in Rome and elsewhere until he was allowed to return in 1871. Afterward he again acquired much political influence, becoming a friend and adviser of President Diaz.

Laveleye, Emile Louis de, a Belgian political economist, born in Bruges, April 5, 1822; died in Doyon, near Liège, Jan. 8, 1891. He studied in the *Athenæum* at Bruges and in the *Collège Stanislas* at Paris, and went through the course of law at the University of Ghent. He devoted himself to politics and the study of economy and government. In 1864 he became Professor of Political Economy at the Liège University. He did not enter the Chamber, though he was an active and influential supporter of the Liberal party, defending its policy in Belgian and French journals. He was a regular contributor to the "*Revue des deux Mondes*," and a voluminous author on many subjects, publishing, among other works, "*Mémoire sur la Langue et la Littérature Provençales*" (1844); "*Histoire des Rois Francs*" (1847); "*L'Enseignement Obligatoire*" (1859); "*La Question d'Or*" (1860); "*Questions Contemporaines*" (1863); "*Etudes et Essais*" (1869).

Lebel, Nicolas, a French inventor, born in Angers, Aug. 18, 1838; died in Vitré, June 6, 1881. He entered the military academy of St. Cyr in 1855; was commissioned sub-lieutenant in 1857, lieutenant in 1863, and captain in 1869; fought in the war of 1870, and was taken a prisoner to Germany after Sedan. Appointed chief of battalion in 1876, he was shortly afterward placed in charge of the rifle school near Tours. Promoted lieutenant-colonel in 1883, his experience with fire-arms caused him to be placed on the commission appointed by Gen. Thibaudin, Minister of War, to discover a new form of rifle for the French infantry. The commission reported in favor of replacing the Gras rifle with a weapon of small caliber, but found no magazine apparatus that it could recommend. While directing the Normal School of Rifle Practice at Châlons he was nominated on a new commission, of which Gen. Tramond was chief, and Col. Gras and Col. Bonnet were members. This one recommended a repeating rifle called the Tramond-Lebel, model of 1886, chiefly after his design, with which the army is now supplied, the manufacture having been begun in December of that year. He was promoted colonel on Jan. 13, 1887, and in 1890,

owing to a chronic affection of the heart, he asked to be retired, and was appointed receiver of taxes at Vitré. Before he left the army he was made a commander of the Legion of Honor.

Lefroy, Edward Gracraft, an English clergyman, born in Westminster, March 29, 1855; died in Blackheath, Sept. 19, 1891. He was a grandnephew of Jane Austen, and his great-grandfather and grandfather were successively rectors of Ashe, near Basingstoke. His early education was received at Blackheath Proprietary School, and he was graduated at Keble College, Oxford, in 1877, taking orders the next year. His first curacy was at St. Mary's, Lambeth, where his sermons attracted the notice of the Archbishop of Canterbury. Later he held curacies at St. John's, Woolwich, and St. German's, Blackheath. His health failing, he gave up church work and devoted himself to teaching. He wrote many reviews for the "*Globe*" and the "*Guardian*," and in 1883 published a volume of sermons entitled "*The Christian's Ideal*." His other works are a volume of sonnets entitled "*Echoes from Theocritus*" (1885) and "*Counsels for the Common Life*" (1885).

Lévy, Calmann, a French publisher, born about 1820; died in Paris, June 18, 1891. He became in 1844 the partner of his brother Michel, who began business as a bookseller in 1836. Devoting themselves especially to the publication of dramatic literature, they extended their business, when their store in the Boulevard des Italiens became a lounging place for Parisian journalists and authors, and became the publishers of several periodicals, including the "*Univers Illustré*," "*Extracite*," and "*Bons Romans*." The death of Michel Lévy, in 1875, left Calmann sole proprietor of the immense business. It was said that his publications, including plays, numbered 2,000,000 volumes. His imprint was a guarantee not only of fair literary quality, but of decorum, and with the naturalistic school he would have no dealings. He was prominent in the Hebrew religious community, and was made a knight of the Legion of Honor in 1878. He left a great fortune.

Litolff, Henri, a French composer, born in London in 1818; died in Colombe, near Paris, Aug. 6, 1891. He was the son of a French father and an English mother, and was a favorite pupil of Moscheles, but went to France and married at the age of eighteen; became known as a pianist in Paris in 1839; gained fame in Belgium and Germany; and composed the overture to "*Catherine Howard*," and other works that found appreciation. In the midst of a brilliant success in London in 1846, he was prosecuted by the family of his deceased wife and fined heavily. Not being able to pay, he was kept in prison till he made his escape in 1850, and married the widow of a musical publisher in Hamburg, where he began to issue the famous collection of music that bears his name. He deserted his wife, who afterward got a divorce, gave concerts in various places, and married, in 1860, a daughter of Count Wilfrid de la Rochefoucauld. During his erratic career he composed an oratorio, half a dozen operas, and numerous smaller pieces. He was a brilliant pianist, and a composer of original genius and scientific knowledge.

Long, Edwin, an English artist, born in 1839; died in London, May 15, 1891. He handled subjects of Oriental antiquity and of classical and early Christian times, and his works, if deficient in artistic quality and technique, were dramatically impressive and pleasing. One of his earliest successes was the "*Babylonian Marriage Market*," painted in 1875, which was followed in 1877 by the equally popular "*Egyptian Feast*." Some of his late works are "*Diana or Christ*," painted in 1881; "*Anno Domini*," exhibited in 1883; and "*Pharaoh's Daughter*," shown in 1886. He became an academician in 1881.

Macedo Costa, Monsignor da, a Brazilian prelate, born in Margongipe, July 5, 1836; died in the middle of April, 1891. He completed his studies with honor in the Seminary of St. Sulpice in Paris, and was consecrated Bishop of Balem and Pará at the

age of twenty-five. In 1870, when Rio Branco was Prime Minister, he began the violent opposition to the religious policy of the Government, one of the incidents of which was the condemnation of the Bishop of Olinda to perpetual imprisonment. He subsequently became Metropolitan Archbishop of Bahia and Primate of Brazil. Among his published writings was a memoir on "The Religious Question."

Magee, William Connor, an English prelate, born in Cork, Ireland, in 1821; died in London, May 5, 1891. His father was an Irish clergyman, and his grandfather was William Magee, Archbishop of Dublin. He took his degree at Trinity College, Dublin, and for a time held a curacy in Dublin, which failing health obliged him to resign. In 1848 he became curate of St. Saviour's, Bath, and in 1850 sole incumbent. While in Bath he delivered a lecture on "The Voluntary System and the Church of England," which made a great impression. In 1856 he went to London to succeed Dean Goulburn at Quebec Chapel, and in 1860 became rector of Enniskillen. In 1864 he was made Dean of Cork; in 1866 dean of the Chapel Royal at Dublin; and in 1868 was consecrated Bishop of Peterborough. In January, 1891, he was translated to the archiepiscopal see of York. He was buried at Peterborough. As a controversialist he had few rivals, and as an orator was equally eminent. In the House of Lords Bishop Magee opposed the disestablishment of the Irish Church in a speech that was considered a masterpiece of eloquence, and a speech made by him upon the Intoxicating Liquors bill of 1872, was scarcely less powerful. He was a frequent contributor to the "Fortnightly Review" and other periodicals, and an article by him on the morality of betting attracted much attention a year or two ago. His attitude concerning the practice, although perfectly sincere, was generally considered somewhat injudicious. He was noted for the sharpness of his wit.

Magliani, Agostino, an Italian statesman, born in Lanzino in 1824; died in Rome, Feb. 21, 1891. He studied in Naples, and lived there till 1860. He held important posts in the administration for many years before he was called into the Cabinet of Depretis in December, 1877, as Minister of Finance. The ministry went out in a few months, but he returned to the same office in December, 1878, and held it twice afterward. Important financial reforms, such as the abolition of the grist tax, the resumption of specie payments, and the reduction of the price of salt, were carried out under his direction. He was nominated to the Senate after his retirement.

Mahon, James Patrick O'Gorman, an Irish politician, born in County Clare in 1802; died in London, June 16, 1891. He was the son of Patrick Mahon and Barbara, only daughter of The O'Gorman, and was commonly called The O'Gorman Mahon, a style still extant in only a half-dozen families descended from the old Irish chiefs. His father fought in the revolution of 1798, and he, after receiving his education in the University of Dublin, plunged into politics, and in 1824 was one of the founders of the Catholic Association. A model of masculine vigor, bold, active, self-confident, fluent of speech, a ready writer, and a master of the sword and pistol, he was one of O'Connell's most efficient lieutenants in the County Clare election in 1828, and in the contest for Catholic emancipation. In 1830 he succeeded O'Connell as member of Parliament for County Clare. Having quarreled with O'Connell, he could not be elected again for a Repeal constituency, and did not return to Parliament till 1847, when the famine brought about the disruption of the Repeal party. He sat for Ennis till 1852. For the next twenty-five years he led an adventurous life in many lands. He was involved in journalistic, financial, and political schemes in Paris and other Continental cities; then went to South America and became general of the Peruvian army, and afterward admiral in the Chilean fleet. After his return to Ireland he was nominated by Parnell as a candidate for County Clare, and elected

in 1879. He sat for that constituency till 1885, and in 1887 was returned for County Carlow. When the split occurred in the Irish party he declared against Parnell. Although a zealous partisan, he was on friendly terms with all the leading politicians, and till the last he retained his agile military bearing and vivacity of manner.

Marais, Léon H., a French actor, born in 1850; died in Paris, Sept. 18, 1891. He was for a long time one of the leading actors at the Gymnase Théâtre, where he created the principal rôle in "Les Dancelloffs." He became insane, and was committed to an asylum shortly before his death.

Marcke, Émile van, a French painter, born in Sévres in 1827; died in Hyères in 1891. He was a pupil of Troyon, and first exhibited in 1857. Certain characteristics caught from his master he remained true to, adding nothing, but he was a conscientious painter, and his technique was good. He painted grazing cattle, grouped with taste and without mannerism, with some monotony of coloring and a softness of execution. He had a constant success, was liked by his fellow-artists, received many medals, was regularly elected on the Salon jury, and in 1872 was made a chevalier of the Legion of Honor.

Martinez, Alonso, a Spanish statesman, born in Burgos in 1827; died in Madrid, Jan. 14, 1891. He was a lawyer by profession, and practiced with much success during the intervals in his political career. In 1855 he was Minister of Public Works in the Cabinet of Gen. Espartero, and on the defeat of the Government was made Civil Governor of Madrid. He was a leader of the Centralist or Moderate Liberal party, a staunch supporter of the monarchy after the restoration in 1875, and retained the respect of his political adversaries by his political honesty and upright life. He held the portfolios of Justice and Finance several times, was last in the Cabinet in 1888, and afterward was President of the Congress until the dissolution of the Cortes.

Mase, Hippolyte, a French historian and statesman, born in Arras, Nov. 5, 1839; died in Paris, Nov. 5, 1891. He was a lecturer on history at the Lyceum of Douai, whence he was called to the professorship of History in the Lyceum of Versailles. The Government of Natural Defense made him Prefect of Landes. When the war was ended he returned to his chair, and in 1875 went to the Condorcet Lyceum. In 1879 he was elected a Deputy for Versailles, and, taking his seat with the Republican Left, he made a name for himself by his speeches on the subjects of education and mutual-benefit associations. He was re-elected in 1881, but failed to obtain one of the seats for Seine-et-Oise in 1885. The department elected him a Senator, however, in 1886, and in 1891 re-elected him at the head of the list. In the Senate, as in the Chamber, he addressed himself to the subject of co-operative provident associations. In 1887 he established a review devoted to the interests of these institutions. Among his numerous published works may be mentioned "Les Gouvernements de France" (1864); "La République des États-Unis" (1869); "La Fin de la Révolution par la République" (1872); "La Lutte contre la Misère" (1883); and "Les Généraux de la République: Kleber, Hoche, Marceau" (1887).

Miklosich, Franz von, an Austrian philologist, born about 1815; died in Vienna, March 7, 1891. He was the greatest Slavic scholar of his time, who discovered the principles of a comparative grammar of the Slav languages. Yet he was opposed to the Nationalist movement in Austria, and was a member of the German Liberal party. He was Professor of Slavic Languages and Literature in the University of Vienna. When the parliamentary era began in Austria he was appointed counselor to the Ministry of Education and president of the commission for state examinations, and in these posts he exerted much influence on the development of the Vienna University. He was an active member of the Austrian House of Peers.

Millet, Aimé, a French sculptor, born in Paris in 1816; died there, Jan. 14, 1891. He was a pupil of his father, the painter; studied sculpture under David d'Angers, and after 1845 he gave up painting and confined himself to sculpture. His "Ariadne," with which he gained the first medal in 1857, is in the Luxembourg gallery. He executed the colossal statue of "Vercingetorix" on the supposed site of Alesia in Burgundy, and the "Apollo" on the summit of the Opera building; also the Murger memorial in Montmartre, and the recumbent statue of Boudin. He was entirely devoted to art, had few social connections, took no amusement, and sought no honors.

Morelli, Giovanni, an Italian art critic, born in Verona in February, 1816; died in Milan, March 1, 1891. His father, a merchant, died when he was a child, and his mother settled in Bergamo, and sent him to the gymnasium at Aargau, whence he went to the University of Munich, and after a wild student's life was graduated in medicine. He formed associations with scholars and artists in Germany and Switzerland, and visited Paris before he returned to his native land with the intention of teaching comparative anatomy in some university. He soon became more interested in the political movement. Wandering through Italy on horseback, and sojourning now in Florence, now in Rome, whence he sent letters on political subjects to the Augsburg "Allgemeine Zeitung," and occasionally visiting his mother in Bergamo, when the revolution of 1848 broke out in Milan he headed the Bergamo volunteers, and, descending on Monza, seized the Austrian barracks. The Provisional Government of Lombardy sent him as its diplomatic representative to Frankfurt. The next ten years he passed mostly in Bergamo engrossed in the study of the Renaissance period and its art. In his visits to the galleries of Italy his observant eye caught the idiosyncrasies shown by different masters in little details; and he learned to recognize each painter's work by the defective drawing or peculiar treatment of the ear, the hand, the knee, or other part of the anatomy. Training himself in this method of observation he possessed a criterion by which he could correct the great authorities who filled books with their disputes regarding the authorship of paintings by kindred painters who attributed famous works to the wrong masters, and who pronounced good old copies to be originals. He did not, however, enter the ranks of professional critics, being recalled to political life after the war of liberation, in which he took no direct part. Elected to represent Bergamo in the Italian Parliament, he took his seat on the right among the adherents of Count Cavour. He fought in the war of 1866 at the head of a band of Alpine volunteers from Bergamo. In 1878 he was nominated a Senator. He had a part in the work of introducing the new Government in the Romagna. Morelli's discoveries were accepted and promulgated by many writers on art; his advice was sought by the directors of picture galleries in England and Germany, and his authority was quoted in the catalogues of the London, Madrid, Dresden, and Munich galleries, but in no Italian catalogue. His critical works were all written in German and published in Germany. In 1874 he began to publish his conclusions in the "Zeitschrift für bildende Kunst" over the pen-name "Ivan Lermolieff" (an anagram of his own name), treating first the pictures in the Borghese gallery at Rome. In 1880 he published a book on the Italian paintings in the Munich, Dresden, and Berlin galleries. In a curious preface to the Italian edition, which was made by a German, he said it had been translated without his permission, as Italians would not find his views to their taste. His own name was first printed in the English translation, published in 1883. When he changed his opinion regarding any painting he frankly corrected his former statements in the successive editions of his works. His latest judgments are contained in two illustrated volumes issued by Brockhaus of Leipzig—one, on the Roman galleries, in 1890, and the other, in 1891, dealing with the

German galleries. The last fifteen years of his life were passed in Milan, where he made a choice collection of Italian and Dutch masters, which he bequeathed to the town of Bergamo. By his application of the experimental method of criticism he cleared away many confused and fanciful traditions of art and assisted to solve the mysteries connected with Giorgione, Bellini, and other names, and to reduce to a scientific basis the history of the Venetian, Veronese, and other schools of northern Italy.

Moseley, Henry N., an English naturalist, born in Wandsworth in 1844; died in Clevedon, Somersetshire, Nov. 10, 1891. He was a son of the canon of Bristol; was educated at Harrow and Exeter College, Oxford, and studied medicine in University College, London, Vienna, and Leipsic. He was a member of the expedition sent by the British Government to observe the solar eclipse in Ceylon and India in 1871, and one of the naturalists on the "Challenger" expedition of 1872-'76; and was specially employed in collecting plants at all the points visited. After his return he resided in Oxford as a fellow of Exeter, and was engaged in preparing his book entitled "Notes of a Naturalist on the 'Challenger'" (London, 1879), and in editing his notes for the official report of the expedition. In 1881 he became Professor of Human and Comparative Anatomy in the University of Oxford. Prof. Moseley published many memoirs on subjects connected with natural history and biology, and was the author of a book on "Oregon: its Climate, Resources, People, and Productions" (London, 1878).

Mutkuroff, Sava, a Bulgarian soldier and statesman, born in 1853; died in Naples, March 15, 1891. He received a military education in Russia, and on the outbreak of the Bulgarian war for independence was assigned to the command of a legion of volunteers raised in Bessarabia, with which he crossed the Balkans with Gurko and took a distinguished part in the desperate fighting in the Shipka pass. After the peace he left the Russian service to enter the East Roumelian militia. With Filoff and Nicolaieff he carried through the regulations by which Aleko Pasha, in agreement with the Porte, freed the service from the incubus of Russian control, and opened the way to Bulgarian officers to reach the higher posts. This was the first Bulgarian victory over the Czar's emissaries. In the attempted revolution at Philippopolis he took a prominent part. In the Servian war he commanded a division of 16,000 men. As commandant of the garrison in Philippopolis he arranged the march on Sophia in 1886 for the restoration of Prince Alexander Battenberg, and when Alexander finally abdicated he was selected by Stambuloff to be one of his fellow-regents. After the election of Prince Ferdinand he was appointed Minister of War. He married Stambuloff's sister, and was devoted to his interests. When he was obliged by failing health to leave his post in 1890, Stambuloff kept it open for him until he was compelled by Prince Ferdinand to choose another War Minister. Mutkuroff was consoled by the appointment of inspector-general with the rank of major-general, but died a fortnight after his promotion.

Nakamura Masanao, a Japanese scholar, born in 1830; died in Tokio early in July, 1891. He became one of the most eminent Chinese scholars in Japan at a time when no other foreign culture or literature was known. Afterward he studied Dutch and English, acquiring a good literary knowledge of both, and when the revolution of 1868 removed the prohibition which previously prevented any Japanese from traveling abroad, he went to England to improve his acquaintance with Occidental civilization. On his return he opened a school like that of his rival, Fukuzawa. Young men and old flocked from all parts of the empire to listen to his lectures on politics and civilization, and through them his ideas on important questions of the time penetrated the masses more readily than those of the men at the helm of government. Subsequently he became Principal of the Normal

College for Women, and later on Professor of Chinese in the newly founded University of Tokio. In 1886 the Emperor nominated him a member of the Senate, and in 1890, on the adoption of the new Constitution, he was made a life member of the House of Peers. He translated Smiles's "Self-Help," Mill's "Essay on Liberty," and other works, into Japanese, and prompted and edited hundreds of translations made by his pupils. He was of assistance to the translators of the Bible into Japanese. He was the highest authority not only on the Chinese language and literature, but on the history and theology of Buddhism.

Napoleon, Prince Napoleon Joseph Charles Paul Jerome Bonaparte, usually known as **Prince Jerome**, born in Trieste, Sept. 9, 1822; died in Rome, March 17, 1891. He was the son of Jerome, ex-King of Westphalia by his second marriage with the Princess Frederika of



Württemberg, and was brought up under the care of his grandmother, Madame Letitia, mother of the first Napoleon. When he was nine years old the family was expelled from Rome on account of the participation of his cousins, the sons of Louis Bonaparte, in the insurrection in the Romagna, and he was taken to Florence, subsequently to Vienna, and in 1835 to Geneva. In 1837 he entered the military institute of Ludwigsburg in Württemberg. Allowed, in 1845, to live in Paris under the name of the Comte de Montfort, he was afterward expelled on account of his supposed participation in the Republican movement. After the revolution of February, 1848, he was elected a member for Corsica in the Constituent Assembly. He voted with the Moderate Republicans, and accommodated his views to those of his cousin Louis Napoleon, and was sent by the Prince President in 1849 as minister to the court of Madrid. Aspiring to the supreme power himself, he left his post without authority, and assumed the lead of the Mountain or Extreme Left. Possessing brilliant mental gifts, and a face and form that were a counterpart of the first Napoleon, he strove to embody the democratic side of the Napoleonic legend, the earlier career of the great Bonaparte, to resurrect the "Child of the Revolution," the militant champion who defended the republic against Europe in arms. His penetration and political genius were recognized, yet he could attach no party to his cause because his truth and honesty were always suspected. Although he stood aloof and induced his father to stand aloof from the *coup d'état*, and was never quite trusted or forgiven by Louis Napoleon, when the empire was fully established, in 1852, the Emperor felt the expediency of collecting the imperial family about him, excluding the descendants of Lucien, as they had been cut off from the succession by the decree of Napoleon I. Prince Jerome was a member of the council to regulate the family succession, and was made a Senator, a knight

grand cross of the Legion of Honor, and a general of division. He went to the Crimea, and was present at the battle of the Alma. His division contributed nothing to the victory, and the loss of Bonapartism marked him as an object of satire, stigmatizing him with no good reason as a coward. He afforded a colorable justification for the attack later by resigning his command and leaving the seat of war, where Marshal St. Arnaud was to die, on a plea of ill health, and gave further offense by publishing in Brussels a pamphlet criticising the policy and strategy of the war. From that time the opprobrious epithet of *Plon-Plon*, a corruption of *plomb-plomb*, indicating the man who ran away from bullets, was popularly applied to him. He fled from ridicule, and remained for some time out of France, returning to serve as an intermediary between the Emperor and the revolutionary and anti-Clerical elements. Like his sister, the Princess Mathilde, the widow of Paul Demidoff, he always cultivated the society of authors and free-thinkers. In June, 1868, he was appointed to the new ministry for Algiers and the colonies, but soon resigned. In January, 1859, he married the Princess Clotilde, daughter of Victor Emmanuel, who was then only King of Sardinia. Owing to incompatibility, added to political motives, they separated after eighteen years of married life. When the Emperor adopted an anti-Austrian policy, and declared war for the liberation of Italy, Prince Napoleon sought to become the leader of a Liberal policy for France, delivering speeches in the Senate on the temporal power of the Pope, and in Corsica on political liberty that created a great sensation. Soon the Emperor changed his mind again and disavowed his cousin's opinions, whereupon Jerome resigned his seat in the Council of State and his appointment as president of the commission for the Exposition of 1867. He had previously presided over that of 1855. He had strengthened the popular estimate of his lack of personal courage by declining, in 1861, to fight a duel with the Duc d'Aumale after attacking the Orleans princes in the Senate. Louis Napoleon called on him again for aid when relations with Germany became strained, sending him to seek allies in South Germany, Austria, and the Balkan countries and Turkey. After his return he had a part in securing the partial adoption, in 1869, of the system of parliamentary government and ministerial responsibility, by exerting himself to carry the reform further and make a clean sweep of the detested official clique identified with despotic methods. This brought him into direct collision with Rouher, the "Vice-Emperor." After the Liberal Ollivier ministry had failed to avert the German war his influence was gone. During the war he was in Italy, whither the Emperor had sent him, according to his own statement, for the purpose of persuading Victor Emmanuel to take sides with France. His absence from the field of battle was enough to prevent him from receiving the support from the army that was necessary for the realization of the hope of his friends that he would succeed the deposed Emperor. Prince Bismarck hotly denied that he ever thought of supporting Prince Jerome for the succession, or even the regency. In the early days he was very unpopular, and yet was dreaded by M. Thiers, who had him arrested and expelled after he had sought to gain a political footing in Corsica and was caught in a Bonapartist gathering at Millemont. Allowed to return by MacMahon, his first public act was to propose an alliance of Bonapartists and Republicans against the Bourbons. He had an open quarrel with the Prince Imperial and the chiefs of the Bonapartist party, and was defeated at Ajaccio by M. Rouher, but was given the seat on account of the latter's political disqualifications. In the Chamber he attacked the Clericals, by which he enraged the Right without conciliating the Left. He was one of the 800 who opposed Broglie and MacMahon in the crisis of 1877. In the next election at Ajaccio he was beaten by Baron Haussmann. His rupture with the Bonapartists was intensified by his sharp attacks on the past

policy and present attitude of the ministers of the empire. When the Prince Imperial was killed in South Africa, Prince Jerome, by the family law and the decision of the *Senatus-Consultum* of 1852, became the heir to the imperial throne, and was accepted as such by the majority of the party, but was rejected by Paul de Cassagnac and the most aggressive section of the Bonapartists, on the ground of his untrustworthiness and because the Prince Imperial had designated Prince Victor as his successor. The party was thus split into two bitter factions, one adhering to the father and the other to the son. In 1880 he issued a declaration approving the policy of the republic in proscribing the religious orders as a vindication of the principles of the Concordat, and denouncing the Conservative Union as supporting a policy opposed to civilization, science, and liberty. In 1883 he inconsistently appealed for the support of the Clericals in a manifesto calling for a *plébiscite* in condemnation of the atheistic republic which had refused its protection to religion, and of the domestic, financial, and foreign policy of the Government. For this he was arrested, but the charge was not pressed. The complete rupture between him and his son Victor was not brought about till 1884, after which the active Bonapartists gravitated into the son's party, which had the Clerical support without which Bonapartism was impotent; others went over to the Orleanists; and a great number of the rank and file accepted the republic. The law of 1886, banishing the descendants of families that have formerly reigned in France, sent both father and son into exile. The Boulangist episode dissipated all the remaining forces of Bonapartism excepting the faithful band still clinging to the hopes of Prince Victor. Prince Jerome Napoleon published many books and pamphlets giving theoretical expositions of the Napoleonic idea and system. He continued under the empire the publication of the correspondence of Napoleon I that was begun under Louis Philippe, and in this he characteristically suppressed everything that derogated from the fame and grandeur of his uncle. His "*Napoléon et ses Détracteurs*" is a reply to the indictments brought against Bonaparte by M. Lanfrey, Col. Yung, and M. Taine, in which much light is cast on his own character and political principles. In his last will Prince Jerome disinherited his son Victor, and forbade him to be present at the funeral, denouncing him as a traitor and rebel against parental authority. He appointed his son Louis his heir and political successor, to represent his opinions, political and religious, which were the true tradition of Napoleon I, and to fulfill the Napoleonic destiny, which is to be the organization of the French democracy.

Neruda, Johann, a Bohemian novelist and poet, born in 1835; died Aug. 24, 1891. Educated, before the revival of Czech literature, in German schools, he became the chief literary representative of the Nationalist movement. His writings, most of which were first printed in the "*Narodni Lisy*," had a strong political tendency and did much to inculcate anti-German feeling.

Nicolai, Baron, known as Père Dom Jean Louis Nicolai, a Russian soldier and religious devotee, died at the monastery of the Grande Chartreuse, France, Feb. 8, 1891. He was a lieutenant-general in the Russian army and aide-de-camp to the Czar, and as Governor-General of the Caucasus he suppressed the revolt under Schamyl. Seriously wounded in the course of the campaign, he went to Paris for medical treatment, and there he made the acquaintance of Bishop Dupanloup, through whose arguments he was converted to Roman Catholicism. Becoming a monk, he retired to the Grand Chartreuse, and passed there the last twenty years of his life.

Nicholas Nicolaievich, Grand Duke of Russia, born at Tsarskoie Selo, Aug. 8, 1831; died in St. Petersburg, April 25, 1891. He was the second of the three brothers of the Czar Alexander II. In the Turkish war of 1877 he was commander-in-chief of the Army of the Danube, and entered Bucharest amid the

plaudits of the populace. At the end of the campaign and just before the peace he was compelled to resign on account of corrupt dealings with army contracts, in which his brother Constantine was also involved. At the time of his death he was aide-de-camp to the Czar (his nephew), a field-marshal, and inspector-general of engineers and cavalry. While commanding the manoeuvres in Volhynia in October, 1890, he was suddenly taken insane, and he remained in that condition till he died. He married, in 1856, the Princess Alexandra of Oldenburg, and left two sons.

Paparrigopoulos, Constantine, a Greek historian, born in Constantinople in 1815; died in Athens, April 26, 1891. He left Turkey after his father and other relatives had been beheaded for political reasons, and was educated in the Lycée Richelieu at Odessa. When Greek independence was established he went to the new kingdom and entered the civil service, and in 1851 he became Professor of History in the University of Athens. A number of historical monographs have been collected in two volumes of "*Historical Essays*," the first published in 1858 and the other in 1890. His chief work was a "*History of the Greek People*," published in five volumes between 1860 and 1874, and in a revised edition in 1885-'87. In a volume written in French and published in Paris, entitled "*Histoire de la Civilisation Hellénique*," he shows the continuity of Greek history down to modern times.

Parnell, Charles Stewart, an Irish statesman, born in Avondale, County Wicklow, June 28, 1843; died in Brighton, England, Oct. 6, 1891. The Parnell family emigrated from England to Ireland in the seventeenth



century. One of its members was the Rev. Thomas Parnell, the poet, and friend of Swift and Pope. Another was Henry Parnell, who was raised to the peerage as Lord Congleton in 1841. The Avondale estate was bequeathed by a friend to Sir John Parnell in the last century, and from him descended through his younger son William to John Henry, father of Charles Stewart. In 1834 John Henry Parnell visited the United States, and in May of that year he married Delia Tudor Stewart, daughter of Admiral Charles Stewart, the "*Old Ironsides*" of the United States navy. He returned with his American bride to Avondale, where he led the life of a country squire. Charles Stewart was their fourth son. When six years old the boy was sent to Yeovil, and he was afterward prepared for college by clergymen of the Established Church in Derbyshire and Oxfordshire. He entered Magdalen College, Cambridge, but took no degree. From his mother he undoubtedly imbibed his early political views. Her

house in Dublin is believed to have been a hiding-place for suspects. The young man finished his education by traveling in the United States with his elder brother John. In 1871 he returned to Avondale, where he endeavored to infuse American enterprise into the management of his estate, sinking shafts in search of minerals, and establishing a saw mill and a brush factory. He joined the militia of his county, becoming an officer in the Wicklow Rifles. His mind was gradually rising to an appreciation of the political struggle in Ireland, and the victory of Mr. Blennerhusselt, also a Protestant landlord, as the representative of home rule, gave the deciding touch to his ambition to enter on a political career. In February, 1874, he made known his desire to stand for Parliament, but his office of high sheriff of County Wicklow, which he then held, disqualified him. A few months later the membership for Dublin becoming vacant through resignation, Mr. Parnell secured the nomination. He broke down utterly in his first speech; his voice and manner, so thoroughly English, alienated the Irish voters, and he was overwhelmingly defeated. Next year John Mitchel returned from exile in America to contest Tipperary, and Mr. Parnell wrote a strong and patriotic letter in support of his claims. Within a few weeks Mitchel and his brother-in-law John Martin, who represented County Meath, died, leaving two vacancies. Isaac Butt, leader of the Irish party in Parliament, invited Mr. Parnell to contest the seat for Meath, and he was elected April 19, 1875. He confined himself during his first year in Parliament to close observation of the methods of the House and the tactics of the Irish party. This had existed ever since the days of O'Connell, but lacked unity of purpose or action, many of its members being willing to barter their votes for Government favor. Mr. Butt was very conservative in his policy, and looked with horror upon the methods pursued by Joseph Biggar, who delighted to irritate his English opponents by speaking against time, moving adjournments, and other dilatory tactics. Mr. Parnell was the first to perceive the enormous power that a minority could wield without transgressing any of the rules of the House, and became a close follower and confidant of Mr. Biggar. Together they inaugurated, in 1876, a policy of obstruction that drew the attention of the world to the Irish question. To extirpate landlordism was the far-off dream of the early Irish patriots. The Land act of 1870 had failed to recognize the Ulster tenant right. The Irish party took up the fight, and Mr. Butt demanded fair rent, fixity of tenure, and free sale—a programme that came to be known as the "Three Fs." Home rule was regarded as a subsequent step. Mr. Parnell and Mr. Biggar determined to wrest laws from the English Parliament by prolonged conflicts. No subject was too irrelevant for them to debate at length. In February, 1877, Mr. Parnell introduced the Irish Church act amendment bill, the object of which was to enable the tenants of the disestablished Irish Church to become proprietors of the lands for which they were paying rent to a commission. The bill was defeated, and a policy of retaliation was immediately entered upon. The first test occurred on the "bill for the improvement of prison discipline," transferring Irish county prisons from the hands of the county officials to those of the Government. Messrs. Parnell and Biggar prolonged the contest until finally the Government gave up the bill in disgust, and the House adjourned without passing the measure. The mutiny bill was next brought forward, and Mr. Parnell vigorously attacked the clauses permitting flogging in the army, with the result that the bill was materially modified in the interests of humanity. The greatest battle of the session was fought over the South African bill, the object of which was to annex the Transvaal without so much as asking leave of the sturdy Boers who had opened up the new county. Mr. Parnell declared that, coming from a country which had experienced English cruelty to the fullest, he took special satisfaction

in endeavoring to thwart the intentions of the Government. For this language he was "named" and removed, but as he had clearly not transgressed any parliamentary rule the motion for suspension was abandoned, the Government announcing that new rules would be brought forward to deal with "obstruction." The introduction of these rules was fought by every parliamentary device. Mr. Butt expressed his indignation that certain members of the party should oppose matters in whose defeat Ireland was not directly concerned, but his influence quickly waned before the increasing popularity of Mr. Parnell. The latter was elected President of the Home Rule Confederation in 1878, in place of Mr. Butt, who, however, remained the nominal head of the party in Parliament until his death, May 5, 1879. Mr. Shaw was then chosen to lead the party. A contest between the moderate section and the Parnellites took place at Ennis, where a candidate nominated by Mr. Parnell was triumphantly elected over the nominee of Mr. Shaw. At this session of Parliament, through the efforts of Mr. Parnell, flogging in the army was finally abolished. Now the agrarian character of the Irish question began to develop. The harvest of 1877 was bad; that of 1878 was worse; in 1879 starvation faced the Irish people. Michael Davitt, who had been released from a convict prison on a ticket of leave, founded the Land League in County Mayo, April 28, 1879. Mr. Parnell joined it in the following June, and in a fervid speech gave the famous advice, "Keep a firm grip on your homesteads." He was elected President of the Land League Oct. 21, 1879. At the close of the session Mr. Parnell made a tour through Ireland, being received everywhere with the greatest enthusiasm, and then acquiring the sobriquet of "Uncrowned King of Ireland." Wishing to obtain pecuniary assistance for the agitation, and also to use American public opinion as a lever in influencing the minds of the English masses, Mr. Parnell and Mr. Dillon sailed for the United States in December, 1879, traveled through the country as far west as St. Louis, and returned by way of Detroit and Canada. The United States Congress gave him permission to address them in the hall of the House of Representatives, a privilege previously accorded to only three persons—Lafayette, Bishop England, and Kossuth. Parliament was suddenly adjourned, and Mr. Parnell returned immediately to conduct a vigorous campaign throughout Ireland. He was elected by three constituencies—Meath, Mayo, and Cork city—and chose the last. At the meeting of the newly elected members he was selected to succeed Mr. Shaw as leader of the party. The conservatives in England had fought the campaign largely on the Irish question and had been defeated by Mr. Gladstone, who immediately brought in a bill that granted to Irish tenants the right to compensation for improvements they had made on the land they occupied. The bill, which would have stopped evictions, failed in the House of Lords. Then the landlords adopted a policy of wholesale evictions, which aggravated matters. During the recess Mr. Parnell visited Ireland, and in a famous speech, when some one of his hearers suggested the shooting of persons who might take farms from which a former tenant had been evicted, said that he wished to point out a much more Christian way: "Shun him on the roadside, in the streets, in the shop, in the market-place; by leaving him alone, by isolating him from the rest of his country, as if he were the leper of old, you must show him your detestation of the crime he has committed." Three days later began the famous siege of Lough Mask, where Capt. Boycott, who had issued ejectment processes, was subjected to the treatment advised. Not a harvester would remain in his service, not a shop-keeper would sell him anything, not a landress would wash for him. Finally 50 laborers, obtained from Ulster under an escort of 7,000 armed soldiers, succeeded in gathering his crops. Thus Mr. Parnell added a new and terrible weapon to the forces of obstruction and a new word to the language, "boycotting." (But the orig-

inating of this word is also claimed for James Redpath. See article "boycott" in the "Annual Cyclopædia" for 1890). Boycotting spread all over Ireland, and became the great instrument of the Land League. The Government was not quite sure whether the acts of the League were illegal, but in November, 1880, Mr. Parnell and others were indicted and tried in Dublin, the trial lasting from Dec. 28 to Jan. 16, 1881, and resulting in a disagreement of the jury. Meanwhile crime had largely increased throughout Ireland, and when Parliament met the Government brought forward three bills: one of coercion, allowing the detention of suspected persons without trial for any length of time; one of suppression, making it a felony to keep or distribute arms in proclaimed districts; and a third, of pacification, offering a land act that established a commission to arbitrate between landlord and tenant. The two coercive measures were opposed line by line and word by word by Mr. Parnell and about thirty of the Irish members. All-night sessions were frequent, and the discussion was only ended by the Speaker arbitrarily declaring the debate closed, Feb. 2. Michael Davitt was arrested the next day in Ireland, and on the Irish members protesting against the conduct of the Government, Mr. Dillon, Mr. Parnell, Mr. Finnigan, and twenty-eight others were one after another "named" by the Speaker, suspended, and forcibly removed from the House. Then the coercion acts were quickly passed, and the land bill came up. This land act, introduced by Mr. Gladstone, was the greatest blow to private ownership of land ever given by any legislative body. A commission was appointed, before whom the tenant could appear if he thought his rent too high and secure the fixing of rent by the court, irrespective of the wishes of the landlords. Naturally they regarded it as socialistic. But it passed the House in July, the Lords did not dare to reject it, and it received the royal assent in August. Mr. Parnell and his followers opposed its passage, on the ground that it did not go far enough, and the leader then declared that he would not be satisfied with anything less than that the land should belong to the cultivators thereof. The bill having become a law, it was decided to test its value, and Mr. Parnell advised that no appeals be taken to the land court without first having been submitted to the Land League executive. Mr. Gladstone construed this as a defiance of the law, declared that "the resources of civilization were not yet exhausted," and on Oct. 13 arrested Messrs. Parnell, Sexton, O'Kelly, William O'Brien, and Quinn, and lodged them in Kilmainham jail. Retaliation quickly followed, Oct. 18, in the shape of the "No Rent Manifesto," signed by the imprisoned leaders, counseling the tenants to pay no rent until they were released and constitutional government was restored. The Government replied, Oct. 20, by proclaiming the League an illegal organization, and the manifesto itself broke down, being condemned by the clergy everywhere. Naturally crime increased with the repressive measures of the Government, and thousands were arrested throughout Ireland on suspicion and without trial. The Liberal party soon began to see the folly of attempting to imprison a whole nation, and peace was determined upon. Capt. O'Shea was the intermediary between Gladstone and Parnell, and the famous Kilmainham treaty was concluded, in which the latter intimated that if the arrears of rents of the smaller tenantry were wiped out and the coercion act abandoned, he would "co-operate cordially for the future with the Liberal party in forwarding Liberal principles." Mr. Parnell and his associates were released May 2, 1882, and the abandonment of the coercion act was announced. Mr. Forster, Chief Secretary for Ireland, was succeeded by Lord Frederick Cavendish, and Thomas Burke became under secretary. Two days later both gentlemen were brutally murdered in Phoenix Park, Dublin. Mr. Parnell issued a proclamation expressing his horror of the crime, but the Government was forced into another and severer coercion act. Mr. Parnell

attempted to recover the ground lost by his party through the Phoenix Park murders, and assisted the Government in passing the arrears act in 1882 and the tramways and laborers acts in 1888. A sum of £35,000 was raised for him in Ireland and America in the spring of 1883, and the Land League, which had been suppressed, was revived under the name of the National League. He secured the extension of the franchise to every householder in Ireland, and in the session of 1885 forced the Government to assent to a land-purchase bill, which was postponed by the overthrow of Mr. Gladstone in June. In the succeeding elections Mr. Parnell nominated every candidate of the Irish party, and returned to Parliament with a compact body of 85 members ready to vote on every proposition in accordance with his wishes. Finding that he could obtain nothing from the Conservatives, Mr. Parnell threw in his vote on the side of Mr. Gladstone, and the Liberals came into power January, 1886. Mr. Gladstone proposed a home-rule measure that secured the support of all the Irish members, but split the Liberal party in twain and restored Lord Salisbury to power in July, 1886. Near the close of the session of 1887 the London "Times" published a series of articles entitled "Parnellism and Crime," attempting to connect Mr. Parnell with the Phoenix Park murders and other assassinations and outrages, and in support publishing letters purporting to have been written by Parnell. These were proved to be forgeries, and their author, one Piggott, fled to Madrid, where he committed suicide. Mr. Parnell brought suit for libel against the "Times" and recovered £5,000 damages, the suit being compromised on that basis. He was then at the height of his power, welcomed with cheers when he rose to speak in the House of Commons, presented with the freedom of Edinburgh in July, 1889, and invited by Mr. Gladstone to Hawarden to settle the details of the Liberal programme. But just then his downfall was preparing. Capt. O'Shea filed a petition for divorce from his wife, naming Mr. Parnell as correspondent, Dec. 28. It was proved that Parnell's relations with Mrs. O'Shea had been maintained with increasing intimacy ever since 1881, a circumstance which accounted for his frequent and mysterious absences from his seat in Parliament. Neither party put in any answer, but privately Mr. Parnell emphatically denied that he had "betrayed friendship, abused hospitality, or broken up a happy home." The divorce was granted in November, 1890. On the assembling of Parliament in the same month, Mr. Parnell was unanimously elected chairman of the Irish party. Mr. Gladstone and Michael Davitt demanded his retirement as the only chance of saving the home-rule cause. Mr. Parnell refused, and a bitter faction fight was the result. Both sides put up candidates for a parliamentary vacancy in North Kilkenny, and Parnell's candidate was defeated Dec. 22, 1890. The Irish bishops took sides against him, and every one hurled stones at the falling leader. But the woman for whom he had sacrificed his political future remained affectionately devoted to him, and on June 25, 1891, Mr. Parnell and Mrs. O'Shea were married at the registrar's office, in Steyning, Sussex. They resided at Brighton, Mr. Parnell going over to Ireland on several occasions to speak in the interests of his candidates, but meeting with uniform defeat. He grew broken-hearted and despondent, while constant attacks embittered his life and began to break down his constitution. He took cold at a public meeting in Ireland, Sept. 27, returned to Brighton, Oct. 2, and died four days later. His body was buried in Glasnevin cemetery, near Dublin, Oct. 12, 1891.

Pedro II de Alcantara, Joan Carlos Leopold Salvador Bibiano Francisco Xavier da Paul Leocadio Miguel Rafael Gonzaga, Prince of Braganza, ex-Emperor of Brazil, born in Rio Janeiro, Dec. 2, 1825, died in Paris, Dec. 5, 1891. He was the son of Dom Pedro I of Braganza and Bourbon, the first Emperor of Brazil, and of Leopoldina, Archduchess of Austria. The royal family of Portugal fled to the colony of Brazil in 1807

when a French army occupied Lisbon, and in 1815 the colony was declared a kingdom. On the death of the insane Queen Maria in 1816 the Regent, her son, was proclaimed King of Portugal, Algarvez, and Brazil, under the style of Joan VI. In 1822, on the summons of the Portuguese Cortes, the King and his court returned to Lisbon, and on May 13, 1822, Dom Pedro, his eldest son, was chosen Perpetual Defender of Brazil. On Sept. 7, 1822, he proclaimed the independence of the country, and was elected Constitutional Emperor. Failing heir to the Portuguese throne in 1826, he resigned it in favor of his infant daughter, Maria da Gloria, and on April 7, 1831, he abdicated the throne of Brazil in favor of his son, who was proclaimed Emperor as Dom Pedro II, declared of age on July 23, 1840, and crowned on July 18, 1841. On May 30, 1843, he was married by procuration, and on Sept. 4 in person, to Theresa, Princess of Bourbon and the Two Sicilies, who was born March 14, 1822, and died Dec. 28, 1889. They had two sons, who died in infancy; a daughter Isabel, born July 29, 1846, who married Oct. 15, 1864, Prince Louis of Bourbon-Orleans, Comte d'Eu, the eldest son of the Due de Nemours, and has three sons living; and another daughter, Leopoldina, who was married to Prince August of Saxe-Coburg-Gotha, and died in 1871, leaving four sons. Dom Pedro was distinguished from his early years for a strong interest in science and the useful arts. He held liberal and progressive political doctrines, and gave much attention to developing the material resources of the empire and seeking profitable commercial relations with other countries. Without transgressing the bounds of a constitutional sovereign, he showed great tact in guiding the political forces, in leading in reform legislation, and in holding the balance of power between the parties and steering the country through political crises. The movement for the abolition of slavery was instituted to a great extent by him, and he took the lead in practically emancipating the slaves on the royal estates in 1866. Dom Pedro was always a great traveler. In the last years of his reign he resided for a great part of his time in Europe, where he underwent treatment for a chronic ailment. By this he lost touch with the politicians and people of Brazil. He was accustomed to say that he would abdicate willingly if the Brazilians wanted a republic, but that they did not because they already had all the advantages of republican government. While he was away his daughter and heir acted as Regent. She was not popular for the reason that foreign priests had much influence over her and she was supposed to be dominated by her husband, whose dictatorial ways had made him obnoxious to officers of the army and others. The sudden emancipation of the slaves had produced a social crisis, and the Regent in signing the decree had offended the former owners of the slaves. When the law providing for the gradual emancipation of slaves was passed, in 1871, Dom Pedro was congratulated by every civilized government. The system of public schools introduced under his auspices had earned the gratitude of the Brazilian people. When he visited Europe in 1871 he attended all the meetings of learned societies in France and England, and on his visit to the United States at the time of the Centennial Exhibition he made a thorough study of American industrial processes and inventions. His intervention in Paraguay, which led to the overthrow of Rosa, added a large strip of territory to Brazil and secured the free navigation of the Rio de la Plata. A dispute with Great Britain was settled in favor of Brazil by the arbitration of the King of the Belgians. His popularity in Brazil was undiminished till his last absence and his failing health led the Republicans, who were numerous and strong, though not active as a political party, to lay plans for preventing the coming of the daughter to the throne. On Nov. 15, 1889, a military conspiracy culminated in the forced abdication of Pedro and the proclamation of the republic. He was taken on board a Government vessel and conveyed, with the

rest of the royal family, to Lisbon. The liberal pension that was offered by the Provisional Government he refused to accept. In the new Constitution adopted on Nov. 15, 1890, it was provided that an annuity should be granted sufficient to guarantee him a decent subsistence. As many of his old adherents followed him into exile and were dependent on his bounty, he was reduced to pecuniary straits. He lived but a short time in Portugal, where his presence was not welcome, and wandered to Paris and other places, depressed and lonely from the loss of his wife, but not cast down by his political misfortunes. To the end he thought the Brazilians would yet recall him. (For a portrait of Dom Pedro, see "Annual Cyclopaedia" for 1877, page 74.)

Peruzzi, Ubaldo, an Italian statesman, born in Florence in 1821; died there, Sept. 9, 1891. He came of a Tuscan patrician family, and was educated in the Paris School of Mines and in Germany. He took part in 1848 in the movement for the recall of the grand duke, and for the next ten years as an adherent of the Moderate Liberal party labored to bring about a fusion with the Democrats. He had an important share in issuing the "Bibliotheca Civile," the aim of which was to prepare the way for Italian union under the house of Savoy. In 1859 he was elected to the Tuscan Chamber, and was dispatched by the Provisional Government on a delicate mission to France. After the annexation of Tuscany by Sardinia he was sent as a deputy from Florence to the National Parliament at Turin. In 1861 he was called into the Cabinet of Cavour as Minister of Public Works. He remained in this post under Ricasoli, and made strenuous efforts to carry out the development of Italian railways. When the Cabinet gave place to the Rattazzi ministry he became one of the leaders of the Opposition, and after the fall of this Cabinet he received the portfolio of the Interior, which he held till the crisis of 1864. He subsequently supported the system of evolution adopted by Depretis, and was a member of the Senate. He was eminent in the engineering profession.

Plumptre, Edward Hayes, an English clergyman, born in London, Aug. 6, 1821; died in Wells, Feb. 1, 1891. He was educated at University College, Oxford, and was elected Fellow of Brasenose College in 1844. He was made chaplain of King's College, London, in 1847, pastor of pastoral theology in 1853, and professor of New Testament exegeses in 1864. He was preacher at Lincoln's Inn for some years; elect preacher at Oxford in 1851-'53 and 1864-'66, and Boyle lecturer in 1866. In 1868 he became prebendary of St. Paul's, and in 1869 rector of Pluckley, in Kent, which living he exchanged for the vicarage of Bickley. From 1869 to 1874 he served on the committee of the revisers of the Bible, and in 1872-'74 was Grinfield lecturer on the Septuagint at Oxford. In 1881 he was appointed to the deanery of Wells. He was widely known as a scholar in many branches of study. His published works are: "Sermons at King's College" (1850); "Lazarus, and other Poems" (1864); "Master and Scholar, with other Poems" (1866); "Christ and Christendom" (the Boyle Lectures, 1867); "The Tragedies of Sophocles in Verse" (1868); "The Tragedies of Aeschylus in Verse" (1868); "Things New and Old, Poems" (1884); "The Spirits in Prison" (1884); "The Commedia and Canzoniere of Dante" (1886). He edited the "Bible Educator" in 1877-'79, and was the author of several sections of Bishop Ellicott's "New Testament Commentary."

Polak, Edward, an Austrian Orientalist, born in 1820; died in Vienna, Oct. 9, 1891. He was graduated in medicine at the University of Vienna, and in 1851 went to Persia to be Professor of Surgery in the military school at Teheran. In two years he was able to lecture, and write books in the Persian language. He was a favorite of the Shah, who made him court physician. He returned to Vienna in 1860 and published his great work on the geology, the flora, and other physical features of the Persian Empire, with its archaeology. He went out again to Persia for a

short time, and in his later life he spent a great part of his income providing young scientific explorers to visit Persia.

Pouyer-Quertier, A. T., a French statesman, born in 1820; died in Rouen, April 2, 1891. A firm believer in Bonapartism, he was elected deputy to the Corps Législatif from the Seine-Inférieure in 1857, having previously held various municipal and provincial offices. He was as strong a Protectionist as he was an Imperialist, and therefore after the conclusion of the treaties of commerce on a free-trade basis in 1862 he entered the lists against the Emperor's commercial policy, and was one of the most eloquent and most dangerous adversaries of the Government on economical questions. For this reason he lost his seat in 1869. On Feb. 8, 1871, he was elected to the National Assembly from his old district by an overwhelming majority, and on Feb. 25 was intrusted with the portfolio of Finance and with the duty of taking part in the decision as to the terms of peace. The Germans in Berlin treated him with special consideration, and through him they secured a rapid settlement of the terms of the treaty of peace. The tendency toward a protectionist policy in France was observed, as soon as he took charge of the Ministry of Finance, by Prince Bismarck, who willingly agreed to the clause of the Frankfort treaty proposed by Pouyer-Quertier by which each government accords to the other most-favored-nation treatment. By this stipulation Pouyer-Quertier falsely hoped that France would recover through the channels of trade the war-fine of 5,000,000,000 francs. When Germany recently endeavored to form a central European Zollverein, he boasted that by his foresight the arrangement had been rendered nugatory, while the Germans are equally satisfied in being able to claim under his clause the reduced schedules in the new French tariff. After his return to France in 1871 he had the good fortune to have the loan of 2,500,000,000 francs subscribed twice over in France alone, and to secure the adoption of all the proposed new duties, with the exception of certain raw materials. Confidence in him was disturbed, however, by his attempt to defend the irregular financial methods of M. de la Motte, prefect of the Eure Department, and on March 5, 1872, he gave in his resignation. Since then he has filled no ministerial post, but he has taken an active part in the discussion of financial questions, at first in the Chamber and afterward in the Senate. He lost his seat in the Senate to a Republican in the elections of February, 1891.

Praeger, Ferdinand, a German musician, born in Leipzig, Jan. 22, 1815; died in London, Sept. 2, 1891. He was a son of Heinrich Aloysius Praeger, a noted violinist and composer, and, though intended for a Protestant clergyman, he learned the violoncello and piano; went to Holland and taught music before he was sixteen, and in 1834 made his way to London, where he gave lessons for a living and composed sonatas and other pieces for the piano-forte and the orchestra. Of his published pieces, mostly written in his early life, forty-eight of the best are contained in the "Praeger Album." He engaged also in musical journalism, lectured, and published a translation of Emil Naumann's "History of Music," a work on composition, and "Wagner as I knew him."

Pressensé, Edmond Dehaute de, a French Protestant clergyman, born in 1824; died in Paris, April 8, 1891. In the time of the empire he made a great name for himself as a preacher. A strong Republican from the time of the revolution of 1848, he affirmed his political doctrines under all circumstances. He occupied himself also with social problems, and took a bold position in discussions in the various social science congresses held in Belgium and Switzerland between 1860 and 1870. On the re-establishment of the republic he became a member of the National Assembly, and was afterward a Senator. He wrote several works on theological subjects, among them "Études Évangéliques," "Vie de Jésus," a reply to Renan's book, and the "Histoire de l'Église et de la Révolution."

Quick, Robert Herbert, an English educator, born in 1831; died at Redhill about March 20, 1891. He was graduated at Trinity College, Cambridge; was for some years a master at Harrow School, and subsequently vicar of Sedbergh in Yorkshire. When a course for the instruction of teachers was introduced at Cambridge he was appointed a lecturer, and delivered a series of lectures on the "History of Education." He contributed papers on educational problems to pedagogic journals, and was the author of "Essays on Educational Reformers," a work highly esteemed by students of educational methods, which was first published in 1868 and was undergoing a revision at the time of his death.

Quinton, James Wallace, an Anglo-Indian administrator, born in Ireland about 1835; died in Manipur, March 25, 1891. He was graduated at Trinity College, Dublin, passed the examination for the Bengal civil service, and went out to India in November, 1856. He spent eight years as a district officer in the Northwest Provinces; was sent in 1865 as deputy commissioner to the newly annexed province of Oude, became officiating commissioner there, and in 1875-'77 was a judicial commissioner in British Burmah. Returning to the Northwest Provinces, he was a magistrate, collector, and judge of sessions in Allahabad, commissioner for different divisions in 1880-'85, and member of the Viceroy's Council for the Northwest Provinces. In 1889 he was selected, on account of his practical judgment and experience, to be chief commissioner of Assam. In this capacity he went to Manipur, where he attempted to carry out the decision of the Indian Government regarding the Senaputty, and was killed with his companions.

Rao, Sir Madhava, an Indian statesman, died in Madras, March 28, 1891. After the transfer of the Government of India from the Council of the East India Company to the British Crown the policy of annexing the territories of troublesome native rulers was to a great extent given up in favor of the plan of deposing the prince, placing a child on the throne, and during the minority of the new prince placing the state under British administration. It was found that the administration of British officers had the serious disadvantage of throwing the machinery of native government out of order; and therefore a demand arose for thoroughly loyal and subservient native statesmen, who could be intrusted with the government of native states that were to be thus disciplined. One of the ablest and most successful of this school of native administrators was Sir Madhava Rao. He was trained to official business in the British service; and when the Gaikwar of Baroda was deposed in 1875 on a charge of attempting to poison the British resident, and the child of a humble family remotely related to the dynasty was declared prince in his place, the Madhava Rao, who was a Hindu patriot and a leading member of the Brahmanical community of Madras as well as an Indian official of high rank, was made joint regent and practical ruler of the state with the title of Rajah. When, in 1883, he handed over the government to the young Gaikwar, who had been carefully educated by English tutors, the native system of administration had been preserved, and yet he had brought Baroda up to the condition of a model feudatory state. He retired to the seclusion of a hermit's life, following the practice of Brahmins who have been prominent in public affairs, at the same time discharging his duties as a member of the Madras Legislative Council, and speaking out plainly and with immense influence over the Hindu community on all the public questions of the time. He was convinced of the uselessness and evil results of any movement for the overthrow of British rule, but believed that the progress of education had brought about a necessity for the co-operation in the government of the intellectual and influential classes of natives; advising, however, the slow and gradual adoption of native participation, with due regard to the traditions and requirements of the less advanced sections, not the hasty in-

introduction of a Western system of representative government, such as the enthusiastic young recipients of European culture desired. Two volumes of the "Opinions of Sir Madhava Rao" were published by his friends shortly before his death. He supported the demands of the Indian National Congress from 1883 till 1889, but opposed the scheme accepted by the Congress in 1890. He was one of the early advocates for the reform of child marriage, enforced widowhood, and other disadvantages under which Hindu women suffer, but was convinced that the movement in this direction ought to be spontaneous within the Hindu community, and therefore he resisted with all his influence the age-of-consent bill of 1891, although he had for many years incurred the hostility of orthodox Hindus by advocating the same reform.

Redwitz, Oskar, Freiherr von, a German poet, born in Lichtenau, near Anspach, June 23, 1823; died in Gilgenberg, near Bayreuth, July 7, 1891. After leaving the gymnasium he studied law, but abandoned this study to give himself up to literature. His first published poem, "Amaranth," met with extraordinary success, and made him a famous man at twenty-five. None of his later works made such an impression as this lyrical epic. Yet his plays, "Philippine Welsch," which was produced in 1859, and "Der Zunftmeister von Nürnberg," brought out the year following, have kept the stage to this day. In 1871 he wrote a patriotic ode entitled "Das Lied vom neuen deutschen Reich." Removing from Munich to Obermais, near Meran, for the sake of his health, he composed the romances "Hans Wartenberg," "Hymen" and "Glück," the first and the last of which went through many editions. His ailments obliged him to give up literary employment for the rest of his life.

Rouss, Edouard, a German theologian, born in Strassburg in 1804; died there, May 12, 1891. He studied at the University of Strassburg, and in Halle and Paris under Gesenius and Silvestre de Sacy. From 1839 he occupied the chair of Theology in the University of Strassburg, and held a prominent place among champions of the liberal school of Protestant theologians. He published in French and in German important treatises on the Old and New Testaments. His last and greatest work was a translation of the Bible with commentaries, which is regarded as inestimable by many Hebraists.

Ribot, Augustin Théodore, a French painter, born in the Department of Eure in 1823; died in Colombes, Sept. 11, 1891. He was the son of a civil engineer, whose early death left the family in poor circumstances. He entered the atelier of Glaize in Paris in 1851; earned money with copies of Watteau's pictures; and in 1861 exhibited the "Cuisiniers," which made him famous at once. It was followed by other naturalistic pieces of *genre* work in a style that recalled the Dutch masters, and then he applied the same method to more elevated subjects, painting his "Saint Sébastien," "Jésus et les Docteurs," "Samaritain," and "Mère Morien" and "Comptabilité," two half-figures. In the war his studio and all his pictures and property were burned. His later works were in the vein of his first productions, faithful impressions of the picturesque in nature, dealing often with ugly subjects. He was recognized as one of the masters in contemporary art, yet many objected to the gloomy tones of his coloring.

Rotelli, Luigi, an Italian prelate, born in Perugia in 1833; died in Paris, Sept. 16, 1891. His studious habits, bright intelligence, and fidelity to duty when a boy studying in the diocesan college attracted the attention of Gioacchino Pecci, the present Pope, who went to Perugia as bishop. He acquired a fine Latin style, and distinguished himself in theology and philosophy, and in a few years his patron placed him in charge of the seminary at Perugia, and afterward introduced him into the diplomatic service of the Vatican. He became Bishop of the See of Montefiascone, and afterward Archbishop of Pharsalus, and after Cardinal Pecci became Pope he was intrusted with various delicate missions, and in 1886 was sent

as apostolic delegate to Constantinople. On June 23, 1887, he was appointed Papal Nuncio to Paris. His task was to carry out the conciliatory policy toward the republic that the Pope had decided on when he saw that there was no hope of a monarchical restoration, and that the power of the Catholic body was weakened by the bickerings between the various factions of Imperialists and Royalists. This policy he urged on the Catholics of France, and after Cardinal Lavigerie had come out openly for the republic, the Pope gave his approval to the new movement in a letter which influenced a majority of the French bishops and some of the leading Clerical journalists and politicians to accept the republic. Having been instrumental in bringing about this state of affairs, Monsignore Rotelli was replaced in 1891 by Monsignore Ferrata, and was raised to the cardinalate.

Schmidt, Friedrich, a German architect, born in Frickenhofen, Sambia, about 1825; died in Vienna, Jan. 23, 1891. His father, a Protestant pastor, had migrated from Hanover, where the grandfather was court architect. The pastor had a passion for building, and his boy was determined to be an architect from his childhood. He went through the Gymnasium at Schorndorf and the Scientific High School at Cannstadt, and, having an overpowering fondness for Gothic forms, he went to Cologne and got employment on the cathedral work as a stone-carver's apprentice. The chief architect discovered his capabilities, and made him his assistant, and afterward overseer. After passing the architects' examination in Berlin, he built some private houses in Cologne and his first Gothic church in Quedlinburg. Like many other artists of romantic bent, he embraced the Roman Catholic religion. A high Austrian official who came to know him in Cologne procured for him the appointment of professor in the academy at Milan, where he began his work in 1857. He was greatly liked by the Italian students, whom he inspired with his own enthusiasm. While there he restored the Santo Ambrogio Chapel, and built a church in Brescia. In 1859 the Italians tried to induce him to stay, but he left with the rest of the Austrian officials, and settled in Vienna. His first work there, a brick gymnasium in the modern Gothic style, already developed in north Germany, offended the taste of the Viennese, and when he afterward placed a Byzantine dome on a Gothic church the critics found much fault with his hardness. He completed the spire of St. Stephen's, and worked eagerly at the restoration of that cathedral against much opposition. His plan for the Berlin Rathhaus received the first prize in 1859, though finally rejected on account of the distaste of the Berliners for the Gothic. In Austria and Hungary, where the Renaissance style was most at home, he created a liking for Gothic forms by his enthusiasm and the influence of his personal charms and persuasive tongue. He soon gained a great reputation as an architect and restorer. He designed the Herz Jesu Church for the city of Cologne. His later works are distinguished by a bold freedom and breadth of style that he had caught in Italy. The chief of his productions, the Vienna Rathhaus, is a combination, as much Renaissance as Gothic, marking the development of a modern style by a union of both.

Simor, Johann, a Hungarian prelate, born in Stuhlweissenburg, Aug. 23, 1813; died in Gran, Jan. 23, 1891. He was the son of a humble artisan. After passing through the gymnasium, he entered the preparatory school for the clergy at Presburg in 1828, and in 1836 was ordained a priest and appointed a chaplain in Theresienstadt. His talents as a preacher and his learning advanced him in less than three years to the position of University preacher and Professor of Religion in the theological faculty at Pesth. In 1842 he gave himself up to the cure of souls, seeking a pastorate at Bajna, near Gran. Four years later he was called to the professorship of Encyclopedic Theology in the Gran Presbyterium, and in 1847 he was appointed to the important post of

secretary of the Gran archbishopric. In 1851 he was called into the Ministry of Education as director of ecclesiastical affairs for Hungary. In 1857 he was consecrated Bishop of Raab. In 1867 he was appointed Archbishop of Gran and Primate of Hungary. His first important official act was to crown the Emperor Franz Josef King of Hungary. In 1873 he was made a cardinal. He disposed of large revenues, spending an annual average of 2,500,000 florins for church buildings, education, and charity, from the time of his appointment to the See of Raab till his death. The cardinal was rough and outspoken and of a determined disposition. The last year of his life was embittered by his quarrel with the Government on the subject of the baptism of children of mixed marriages, in which the parish clergy refused to follow his dictates, and left him helpless when he tried to effect a compromise.

Smith, William Henry, an English statesman, born in London, June 24, 1825; died at Walmer Castle, Oct. 6, 1891. He was the son of William Henry Smith, who established in the Strand a business for distributing newspapers and periodicals, which passed into his own hands, and grew to enormous proportions in connection with the sale of books and periodicals at the railroad stations that became almost a monopoly in his hands. At the age of forty he found time to gratify his ambition for political honors. He presented himself as a Conservative candidate in 1865 for the representation of Westminster, where his business was situated, and though he was opposed by John Stuart Mill and one of the Grosvenor family, which owned a great part of Westminster, both members of the Liberal party, which had always been in the ascendancy in Westminster, he ran behind only about 700 votes. In 1868 the conditions were changed by the reform bill, which had been opposed by the Duke of Westminster, and had operated favorably to the Conservatives in most London constituencies. In that year Mr. Smith was returned at the head of the poll, while the Duke of Westminster's relative came in second, and Mr. Mill last. It was considered a great party victory to win a seat in the stronghold of Liberalism, and therefore he took at once a prominent position in the Conservative ranks, the more so because he was a man of the people, not one of the aristocratic Tories, and represented the democratic tendencies suited to the enlarged borough franchise. When he first turned his attention to politics he was a Whig, and he became a Tory because the Reform Club was too exclusive to receive a man engaged in the retail trade. In Parliament he had many opportunities of displaying his political sagacity and business capacity without making himself obtrusively conspicuous. He was prominent before the public also as an active member of the first London School Board, and in 1874 he was returned for Westminster by a majority of nearly three to one. Mr. Disraeli, who had already marked him out as the middle-class representative that he needed to strengthen his Cabinet, made him Financial Secretary of the Treasury, and in 1877 promoted him to the place of First Lord of the Admiralty, in which he made a good record. When his party was swept out of power in the general election for 1880 he retained his seat, and while in Opposition he spoke, not often, but effectively, on financial, naval, and business questions, criticising the Government severely in 1884 for not keeping the navy in a condition to meet the growing demands upon it. When Lord Salisbury formed a Cabinet in 1885 he made Mr. Smith Secretary for War. On the resignation of Sir William Hart Dyke as Chief Secretary for Ireland he accepted the post, but the Government was overturned not a week after his transfer. On the formation of Lord Salisbury's second Cabinet, in the summer of 1886, he returned to his former place as Secretary of State for War, and again he had not sufficient opportunity to direct his business talent to the reorganization of this great spending department, for the resignation of Lord Randolph Churchill made Mr. Goschen Chancellor of the Exchequer, while the

leadership of the House was given to Mr. Smith, with the office of First Lord of the Treasury, the one usually held by the Prime Minister. Many Conservatives looked on Mr. Smith's rapid rise unfavorably, and mistrusted his capabilities as leader of the House of Commons, for he made no pretensions to eloquence and lacked every element of the distinguishing culture of the English statesman. Notwithstanding this, he was remarkably successful as the leader of the party, and by his plain honesty, lucid explanations, moderation of speech, absence of bitter partisanship, and suavity he won the respect of both sides of the House. On the death of Lord Granville the Queen appointed him Warden of the Cinque Ports, which gave him the right to occupy Walmer Castle.

Springer, Anton, a German historian and critic, born in 1825; died in Leipsic, May 31, 1891. He was a professor in the University of Leipsic, and the author of works of high repute on the history of art, among them a hand-book of the history of the fine arts, a review of the history of art in the nineteenth century, and a study of Raphael and Michael Angelo. He also published a "History of Austria since the Congress of Vienna."

Steel, Sir John, a Scotch sculptor, born in Aberdeen in 1804; died in Edinburgh, Sept. 15, 1891. He was educated in Edinburgh, studied art for several years in Rome, returned to Scotland in 1833, and acquired an immediate reputation through his colossal design of "Alexander taming Bucephalus," which has only recently been cast in bronze and erected in Edinburgh. He made the statue of Queen Victoria for the Royal Institution in Edinburgh, the statue of Sir Walter Scott for the Scott monument in that city, the medallion portrait of Scott in Westminster Abbey, and statues and busts of many eminent people. He made a statue of Robert Burns for the city of New York. One of his most famous works is the equestrian statue of the Duke of Wellington, in Edinburgh, and the most elaborate is the Scottish national memorial of Prince Albert, at the unveiling of which, in 1876, he received the order of knighthood.

Sullivan, Barry, an English tragedian, born in Birmingham in 1824; died in Brighton, May 8, 1891. He made his first appearance on the boards at Cork in 1840, joined soon afterward the company of the Theatre Royal in Edinburgh, and after remaining there for several seasons traveled through the provinces. His first London appearance was at the Haymarket in 1851 as Hamlet, in which he scored a success. His reputation grew, and when he went to the United States and Canada in 1857 he was received with enthusiasm, and did not return to England until 1860. A year later he went to Australia, where he remained five years, meeting with an extraordinary greeting in every city. In Melbourne he played for 1,000 nights. Returning to England by way of India in 1866, he afterward appeared in Shakespearean characters, and for some time was the lessee of Holborn Theatre. Of late years he has played mostly in provincial towns.

Sutherland, John, an English sanitarian, born about 1820; died in Norwood, July 14, 1891. He was educated for a physician and practiced for a short period in Liverpool, where he became known to the public as a sanitary reformer through the "Health of Towns Journal," which he edited. In 1848 he entered the Government service under the first Board of Health. He was a representative of Great Britain at the Paris Conference of 1851 to regulate quarantine law. In 1855 he was engaged in carrying into effect the law abolishing intramural interments, and was afterward placed at the head of a commission sent to the Crimea to inquire into the health of the troops. He served on a commission on the sanitary condition of the British army in 1858 and on one on the army in India in 1863, suggested important improvements in barracks and hospitals, and was engaged in carrying out this work till his retirement, in 1888.

Tamasese, ex-King of Samoa, born about 1830; died in Lufilufu, April 17, 1891. When the Germans at-

tempted to establish a protectorate over the Samou Islands in 1881 they took advantage of one of the feuds between the chiefs which have depopulated the islands since the introduction of fire-arms to depose Malietoa, who had established his rule over the whole group and set up in his place Tamasese. Prince Bismarck decided not to carry out the annexation when he found that the United States Government would treat it as an unfriendly act. Tamasese was supported by only a small part of the people, and by agreement of the United States, Germany, and Great Britain, Malietoa was restored, although the people preferred Mataafa, who had led them against Tamasese after Malietoa's deportation. Tamasese and his followers soon ceased to struggle against the decision of the powers, while Mataafa continued the war against Malietoa.

Taubert, Wilhelm, a German musician, born in 1812; died in Berlin, Jan. 7, 1891. He was director of the Berlin court concerts, with the title of chief chapel-master from 1881 till 1887, and from 1849 till 1871 he was leader of the orchestra of the opera house. He was the author of a great number of orchestral pieces, among them the operatic score for Shakespeare's "Tempest." He succeeded also in light pieces, and leaves to the world several collections of musical trifles, "Kinderseenen" and others, sprightly and full of fancy and humor.

Téti, Olophée, known as Sister **Thérèse**, a Canadian missionary, born in 1824; died in Montreal about Dec. 1, 1891. She was the daughter of a notary, and entered the order of the Sisters of Providence in 1844. Sent with another nun to the Indians of the far West in 1852, she traveled on horseback almost to the Pacific coast, and in a region where no white woman had been seen before she acquired a remarkable influence over the savages. In 1857 she went to Chili to establish a home for abandoned children. She was made treasurer of the order in 1866, and soon after taking up her residence in Montreal she founded the great insane asylum, the buildings of which were burned with 100 patients in 1890. Of this establishment she was mother superior till the time of her death. She had extraordinary influence over violent lunatics, and possessed a degree of resolution and eloquence that gained her point whenever she made a demand on the Quebec Government for money.

Vela, Vincenzo, an Italian sculptor, born in Lignoretto, Ticino, in 1822; died there, Oct. 5, 1891. He was the son of poor peasants, and was employed at the age of twelve in a stone quarry. Manifesting great aptitude for sculpture, he was sent by friends to Milan in 1836, was employed in the restoration of the cathedral, and studied under Cacciatori. In 1848 he took a prize with his bas-relief "Christ restoring the Daughter of Jairus." He first achieved a reputation with his statue of "Prayer." Called back to Switzerland to take part in the war of the Sonderbund, he fought afterward in the Italian revolution of 1848. After the campaign was over he went to Rome, where he modeled his "Spartacus," which attracted much attention in the Paris Exhibition of 1855. He settled for a time in Turin, producing "Hope" and "Resignation," and at Bergamos he made "Harmony in Tears" for the tomb of Donizetti. At the Paris Exhibition of 1868 he showed "France and Italy," which was presented to the Empress Eugénie by the ladies of Milan, and won for the sculptor the decoration of the Legion of Honor. He subsequently sent other works to the Paris Salon, receiving a first medal in 1867.

Vitu, Auguste, a French dramatic critic, born in Meudon in 1823; died in Paris, Aug. 5, 1891. He learned the printer's trade, obtained a public office, wrote some small comedies for minor theatres, and before he was twenty years old entered the field of journalism as a contributor to the "Mercure des Théâtres" and "Charivari," his articles in which have been published in book form. In the revolutionary period between 1848 and 1851 he was an active political journalist, starting various short-lived journals in Paris and the provinces. He pub-

lished a book called "Révision on Révolution," giving his views on universal suffrage. At the time of the *coup d'état* he was a partisan of Louis Napoleon, and he obtained a municipal office which kept him out of journalism for some years. Resuming his newspaper career, he became a recognized authority on finance, editing influential commercial journals and publishing a "Guide Financier," which has been the model for many succeeding books. Since 1870 he has devoted himself entirely to dramatic criticism. As critic for the "Figaro" he wielded an influence necessarily great, which was enhanced by the honesty, intelligence, and discrimination of his judgments, less labored and polished than those of the weekly writers, but equally critical and more effective in guiding public taste.

Waring, Edward John, an English medical author, born in Tiverton, Devonshire, Dec. 14, 1819; died in London, Jan. 22, 1891. He was the son of a captain in the British navy. He sailed as a ship's surgeon to Sierra Leone in 1841, afterward passed his medical examination in the College of Surgeons, and was health officer in Jamaica in 1842-43, and afterward as agent of the Emigration Commission he visited the United States and the various British dependencies. In 1849 he went to India as an army surgeon, and while stationed at Mergui, in Tenasserim, he compiled his "Manual of Practical Therapeutics" (London, 1854). Finding the supply of drugs running short in his station, he sought for substitutes among native remedial agents sold in the bazars and in plants of the neighboring forests, and published a volume on the results of his investigations, which he followed up after his return from England in 1853, in which year he became physician at the Residency in Travancore. In 1856 the Maharajah of Travancore made him court physician. In 1860 he published "Bazar Medicines." Materials collected for an "Encyclopædia Therapeutica" that he never completed were utilized partly in his "Bibliotheca Therapeutica" (1866) and partly in "Mayne's Lexicon." He returned to England in 1863, and in 1865 was selected as chief editor of the "Pharmacopœia for India," which was completed in 1868. He published also "Tropical Resident at Home" (1866), "Cottage Hospitals" (1867), and religious books. Both in India and in London he organized benevolent and missionary enterprises.

Weber, Wilhelm Eduard, a German physicist, died in Göttingen, June 24, 1891. He gave his attention chiefly to electro-dynamics, and in this field his researches were extensive and thorough. He is said to have produced the first electro-magnetic telegraph, with which he experimented successfully in 1833.

Weiss, Jean Jacques, a French author, born in 1829; died in Fontainebleau, May 19, 1891. He was the son of a Swiss soldier in the French service, was educated in the École Normale, was a teacher for some years in provincial academies, and then became a journalist in Paris and wrote articles for the "Courrier de Paris" and other papers, assailing the empire in skillfully guarded phrases. When Ollivier formed his Liberal ministry in 1870, the two sharpest satirists of the Opposition press—Prévost-Paradol and Weiss—accepted office under the empire, the former becoming minister at Washington and the latter Director of Fine Arts. After the fall of the empire he edited a newspaper of vague and uncertain political character. During the siege of Paris he bribed the *valet* of Mr. Washburne to bring him at night the American minister's copy of the London "Times," and from it he extracted facts and political secrets and published them in his paper, to the bewilderment of the Government authorities. When peace was established he joined in the attacks on M. Thiers, and when the Republican President was ousted he was rewarded by being made a counselor of state. By supporting the anti-Republican combination in 1877 he sacrificed his influence and reputation as a political writer. Nevertheless M. Gambetta appointed him to a high place, that of director of the political department in the Ministry of Foreign Affairs, and

by so doing he provoked an outcry that contributed to his own downfall. Returning to journalism, Weiss undertook for a time the dramatic *feuilleton* for the "Journal des Débats," which he abandoned to devote himself to literature. He was the author of several able works, and for the last six years of his life was librarian at Fontainebleau.

Whichcote, George, an English soldier, born in Lincolnshire, Dec. 21, 1794; died near Coventry, Aug. 26, 1891. He was a son of Sir Thomas Whichcote, was educated at Rugby, and on leaving school entered the army, receiving his commission in January, 1811, and was sent to the Peninsula and took part in the severe fighting under Wellington, being present at Sabugal, El Bodon, Alfayates, the storming of Rederigo, Badajos, and the battles of Salamanca, Vera, Vittoria, Pyrenees, Nivelle, Orthes, Tarbes, and Toulouse. At Waterloo he commanded a company of the 52d Regiment, which played an important part in the events of the day. He was promoted captain in 1818, major in 1825 (when he was retired on half-pay), lieutenant-colonel in 1838, colonel in 1851, major-general in 1857, lieutenant-general in 1864, and general in 1871.

White, Sir William Arthur, an English diplomatist, born in 1822; died in Berlin, Dec. 28, 1891. The son of a petty consular official of Irish origin, he learned from Polish family connections to speak Polish and German so well, that his English always retained a foreign accent, although he was educated on the Isle of Man and at Cambridge. He was therefore specially fitted for the appointment that he received of secretary to the British consul-general at Warsaw in 1857, at a time when a new fermentation was arising in Poland. He performed the duties that were committed to him with tact and discretion, was acting consul-general for a time, was made vice-consul in 1861, and in 1864 was promoted to be consul at Dantsic, while continuing for a year longer to conduct the affairs of the consulate-general in Warsaw. In 1866 he went for six months to Belgium as acting consul-general, and then proceeded to his post at Dantsic, where he remained nine years. His familiarity with Slavonic languages and with the political doings of Russia in the East were of service to the Foreign Office, marking him as the proper man for the post of political agent and consul-general at Belgrade in 1875, when the movement began that resulted in the Servian war and the Russo-Turkish war. He had thus crossed the border line between the consular and the diplomatic service, but would probably have never reached the upper grades, which are the prizes for the diplomatic guild of the aristocracy, had not Lord Salisbury, whom he assisted as a specialist at the conference in Constantinople, noted his remarkable knowledge and ability. From him the Foreign Minister gained much of the information that caused him to amend his views on the Eastern question. He went to the Berlin Conference as an expert, and for the services that he had rendered in the preceding three years he was appointed minister at Bucharest, afterward received the honor of knighthood, and from this period stood in the forefront of events, was recognized as the greatest authority on the Eastern question, and had the first claim to the succession of the embassy at Constantinople. His opinions were decisive before he was sent on special missions to Constantinople in 1885 and 1886. It was his advice that determined the attitude taken up by the British Government toward Bulgaria at the time of the annexation of Eastern Roumelia and maintained ever since. On Oct. 11, 1886, he was appointed ambassador to the Porte. His frank and open manner, his resounding voice and imposing personality, his penetration and ready memory, his store of information gathered from all sorts of people and from newspapers, his sagacity and fine tact, impressed the Turks from the Sultan down, and gave him a personal power and influence over his fellow-diplomats at Constantinople that even the Russians recognized by calling him the English *Ignatieff*. In England he

was appreciated by Liberals and Tories alike as the greatest expert in Eastern affairs that was ever sent to the Golden Horn, not less sagacious and adroit than Lord Stratford de Redcliffe, and one whose place it will be equally hard to fill. He took a leave of absence in June, 1891, to enjoy a vacation in Germany, and died suddenly from an attack of influenza.

Wills, William Gorman, a British dramatist, born in County Kilkenny, Ireland, in 1830; died in London, Dec. 14, 1891. He was graduated with honors at Trinity College, Dublin, studied art in that city, and won some reputation as a painter of portraits. At the age of twenty-seven he produced a successful play, "The Man o' Airlie," which was placed on the stage in the United States by Lawrence Barrett. His "Charles I" was the play in which Henry Irving won his first renown as a tragedian, and the same actor presented his "Eugene Aram" and "Vanderdecken." "Jane Shore" was brought out in New York by Genevieve Ward and "Olivia" by Fanny Davenport. Other popular pieces written by him are "Nell Gwynn" and "William and Susan." His last work, "A Royal Divorce," founded on the story of Bonaparte and Josephine, was produced in London a few months before his death by Grace Hawthorne. He was the author of several novels, of which "Notice to Quit" and "Wife's Evidence" were republished in the United States.

Windthorst, Ludwig, a German statesman, born in Kaldenhof, Hanover, Jan. 17, 1812; died in Berlin, March 14, 1891. He was the son of Catholic parents,



and his father, a wealthy farmer, sent him to the ancient Carolinum Gymnasium in the neighboring town of Osnabrück to prepare for entrance in a theological seminary. Preferring a legal career, he studied in Göttingen and Heidelberg, gained a reputation as attorney for Catholic societies, was appointed chief judge of the Court of Appeals at Celle in 1848, and in the following year entered the Second Chamber of Hanover, in which he supported the Particularistic or anti-Prussian party, and took so prominent a position that he became leader of the Ministerial party, and in 1851 was elected president. Soon afterward he was called into the Cabinet as Minister of Justice. This post he held from November, 1851, till 1853, winning much influence over King Georg V, whom he persuaded to receive Catholics at court. In 1862 he was again appointed Minister of Justice in the Brandis-Platen ministry, which favored an alliance with Austria against Prussia. On his retirement, he was appointed, in October, 1865, chief syndic of the Crown at Celle. After the annexation of Hanover by Prussia he was the King's representative in the negotiations with Prince Bismarck for compensation, which resulted in the treaty of Sept. 29, 1867, and till the end of his life he acted as legal counsel and political representative of the family of the Guelphs.

In 1867 he was elected to the North German Parliament and to the Prussian House of Deputies as representative of the district of Meppen, and in both bodies he displayed untiring activity as leader of the Catholic or Center party. It was largely his political genius, his tenacity of purpose, supple adaptability, readiness of resource, power of management, sagacious insight, force of character, moral ascendancy over others, diplomatic tact, tactical skill, and unrivaled dialectical and oratorical talents that created and held together the great Center party, which was an instrument in his hands for the achievement of successes that were remarkable, measured by the difficulties under which they were accomplished. He was the leader and the autocrat of the Ultramontane party from the opening of the first German Reichstag in March, 1871. For sixteen years he conducted the *Culturkampf* against the May laws of 1873, and held together the Center party, harmonizing the conflicting factions and interests, and inventing, always at the right moment, the war cry that rallied the electors to the party standard, and at length he triumphed over the dominant tendencies of the age and compelled Prince Bismarck to sue for peace. Of all the debaters in the Reichstag he was the one whom Bismarck feared and respected most, the only one who almost invariably carried off the honors of the battle in an oratorical duel. The Clericals were the most numerous faction in the Reichstag and next to the strongest in the Prussian Landtag. With their natural allies, the Guelph, Polish, and Alsatian Particularists, who usually followed Windthorst's dictation, they were led by him into temporary combinations with Conservatives, or Progressists, or Socialists against Bismarck, or supported his measures against the Opposition, always exacting a concession for their aid, until little was left of the Falk laws in May, 1889, when the Chancellor completed his pilgrimage to "Canossa" by repealing the remnant. Between 1881 and 1887, after the disruption of the National Liberals, which he had helped to bring about by supporting Bismarck's protective policy in 1879, Windthorst often found himself at the head of a majority of the Reichstag. The "Pearl of Meppen," as he was nicknamed, was diminutive in stature, as was indicated by the other facetious epithet, "his little Excellency," and his face was exceedingly homely except when brightened in the animation of speaking. His speeches were smooth and diplomatic, his manner insinuating and conciliatory, his expressions always cautious and guarded, his statements of fact infallibly exact, and his incisive wit and fine irony were never unkind and left no rankling wound. It was only when vaunting the greatness and glory of the Catholic Church, and bewailing its wrongs, that he allowed his imagination free play and rose to passionate eloquence.

Wingfield, Lewis, an English author, born in 1842; died in London, Nov. 12, 1891. He was a brother of the present Lord Powerscourt. He received his education at Eton College and the University of Bonn, and passed an active and adventurous life, being at various periods an artist, an actor, an author, a critic, a surgeon, an explorer, and a war correspondent. He traveled extensively in the East, became familiar with Oriental life, and was one of the earliest foreigners to obtain permission to visit the interior provinces of China. During the Franco-Prussian War and in the operations against the Commune in Paris he labored in the ambulance department. Recently he has utilized his antiquarian knowledge in arranging costumes and scenery for the presentation of Shakespearean plays. His most popular books are "Lvely Grizell" and the "Globe-Trotter."

Wolf, Albert, a French journalist, born near Cologne, Germany, Jan. 1, 1827; died in Paris, Dec. 22, 1891. He was educated in Germany, studying philosophy at Bonn and painting in Düsseldorf, began newspaper work there, and published a volume of stories and a humorous book on the Rhine voyage, illustrated by himself. Soon after his arrival in Paris in 1857,

whither he went as correspondent of the Augsburg "Allgemeine Zeitung," but was discharged after his second letter, he adapted himself to French taste and ways, yet it was long before he was able to obtain a living. He was patronized by Alexander Dumas, who made him his secretary. M. Villermessant, the editor of the "Figaro," rejected many of his articles before he was accepted as a regular contributor. During the Franco-Prussian War he retired to Belgium, being a Prussian citizen. Afterward he returned and was naturalized. In his writings he was intensely hostile to Germany. When the first Bayreuth festival occurred he reported it, and covered the Wagnerian music with ridicule. His caustic comments and epigrammatic criticisms on art, literature, music, drama, were read with keen interest, and he formed a style both in criticism and in political writing that has found many imitators. When M. Villermessant died he left the "Figaro" by will to M. Wolf and three other journalists. He was one of the first to introduce into journalism the daily review or chronicle, which was in fashion in the time of the empire. Six volumes of his "Chroniques" in the "Figaro" have been printed: "Voyages à travers la Monde," "L'Ecume de Paris," "La Haute Née," "La Capitale d'Art," "La Glorie," and "La Gloire de Paris." The third of these is a collection of his comments on painters and sculptors, and what he has published in recent years has been chiefly confined to criticisms on exhibitions of paintings. He was a nephew of Jacques Offenbach, the composer.

Wyllie, Sir William, an English soldier, born in 1802; died in London, May 26, 1891. He entered the British army in 1818; sailed for India in the following year, and at the age of twenty commanded a detachment of three hundred native soldiers sent against the rebel Roop Singh in the Mahratta country. He commanded a detachment in Gujerrat in 1823, and in 1826 distinguished himself as adjutant of his regiment in an attack on the heights of Jerun in Cutch. As major of brigade to the Malwa field force in 1827, he showed such ability that he was selected to perform the same duties in the Afghan expedition of 1838. He was the first British officer to land on the banks of the Indus, and took a prominent part in the capture of Ghuznee and the occupation of Cabul. On returning to India he was engaged in the storming of Khelat. In 1840 he was adjutant-general of the force sent to relieve Sir William Nott at Candahar, and was present at the storming of the Hykulzyo heights and the forcing of the Khojak pass. He next served in Sir Charles Napier's campaign for the conquest of Sind as assistant-adjutant-general, and was badly wounded at the battle of Meeanee. In 1844-'45 he commanded the force sent to suppress a rebellion in the southern Mahratta country, and subsequently he commanded the brigade at Ahmednuggur. He was colonel of a line regiment after the amalgamation of the East India Company's forces with the British army until he retired.

Yoshida Kyonari, Viscount, a Japanese diplomatist, born in Satsuma in 1844; died in Tokio, Aug. 17, 1891. He was the son of an impoverished family of the Satsuma aristocracy, and in his youth was clerk in the local public bureau till he entered the English school at Kagoshima at the age of seventeen, where he made such rapid progress that he was selected by the Prince of Satsuma to be educated abroad. He studied in University College, London, and afterward for six years in American colleges, returning to Japan in 1868 after the revolution. He was employed at first in the finance department of the new Government. In 1873 he was transferred to the Ministry of Foreign Affairs, being appointed on the commission then constituted for the purpose of devising a scheme for the revision of the treaties. In 1874 he was sent as minister plenipotentiary to Washington, where he remained until in 1878 he concluded a treaty conceding all that Japan contended for in regard to consular jurisdiction and the right to fix import duties, with a proviso that the treaty should not go into force until the other powers had agreed to accord the same rights.

All the powers of Japanese diplomacy have been constantly exerted to obtain from Great Britain and the other European powers the concessions that the United States are willing to accord and the equal treatment that is observed between civilized governments, and the realization seems further off now than when Viscount Yoshida made the treaty with the Government at Washington. He returned to Japan, became Assistant Minister of Foreign Affairs under Count Ito, and a member of the Senate and of the Privy Council, and devoted his whole mind and energy to the object of treaty revision.

Zalowski, Lieutenant von, a German soldier, born about 1865; died in Ilensa, East Africa, Aug. 18, 1891. He attended the Military Academy from 1882 till 1885, and on passing the officers' examination he entered, on Aug. 29, 1885, into the service of the German East Africa Company. He led several expeditions into the interior, founded the station of Usungula, and at the breaking out of the revolt of the coast tribes was commandant at the Pangani station. Joining Capt. Wissmann's force, he distinguished himself in the assault on Bushiri's camp, led a reconnoitering party to Dunda, and took part in the storming of Saadani, where he commanded a part of the assailing force and was at the front through all the battle. On July 30, 1891, he set out from Maroro at the head of a punitive expedition against the Wahehe marauders who made the caravan route unsafe. Penetrating their country, the expedition was caught in an ambuscade as it entered a wood between Lala and Mdawaro and was almost annihilated.

OHIO, a Central Western State, admitted to the Union in 1803; area, 39,964 square miles; population, according to last census (1890), 3,666,719, being the fourth in rank of the States. Capital, Columbus.

Government.—The State officers for the year were: Governor, James E. Campbell. Democrat; Lieutenant-Governor, William V. Marquis; Secretary of State, Daniel J. Ryan; Auditor of State, Ebenezer W. Poe; Treasurer of State, John C. Brown; Attorney-General, David K. Watson; Board of Public Works, C. A. Flickinger, Wells S. Jones, William M. Hahn; Commissioner of Common Schools, John Hancock; Judges of the Supreme Court, Thaddeus A. Minshall, Marshall J. Williams, William T. Spear, Joseph P. Bradbury, Franklin J. Dickman; Clerk of the Supreme Court, Urban H. Hester. All these officers, except the Governor and Lieutenant-Governor, were Republicans.

Finances.—The balance in the treasury at the beginning of the fiscal year was \$402,586.44. During the year the State's proportion of the direct tax refunded by the United States Government was received, amounting to \$1,332,025.93. The receipts from all other sources were \$5,737,268.93, making an aggregate of treasury resources of \$7,471,881.30. During the year the funded debt was reduced by the payment of \$250,000, and in addition bonds of the State Board of Agriculture were paid to the amount of \$67,739.63. The other disbursements were \$5,783,549.87, leaving a balance in the treasury at the end of the fiscal year of \$1,370,591.80.

Decennial Appraisalment.—The decennial valuation of the real property in the State was made in 1890 by the local assessors, and after revision by the county boards of equalization the returns were passed upon in 1891 by the State Board of Equalization. The county returns showed in general a considerable falling off in the value of farm lands, compared with the figures of

the preceding decennial valuation; but the complaint in nearly every instance was that the local valuations had been too high. The State board, in revising the returns, paid attention to those complaints, and transferred a considerable percentage of the total from farm to urban property. In 1880 the total valuation of real property in the State was \$1,097,509,830, of which \$684,326,516 was returned as farm property and \$412,683,314 as real property in cities, towns, and villages. The decennial valuation of 1890 as finally left by the State Board of Equalization in 1891 placed the total amount of real property at \$1,144,033,563, of which \$576,183,975 was farm property and \$567,849,587 real property in cities, towns, and villages. In 1880 the farm property formed 62 per cent. of the total, while in 1890 it had fallen to 50 per cent. There had been, according to the returns of the two periods, an actual depreciation in farm property of nearly 16 per cent. It must be understood that these are the figures for taxation only. While the Constitution requires that all property shall be taxed at its true value in money, the custom is to place the taxation value at about 40 per cent. of its selling value. The amount of farm lands in 1890 was returned at 25,319,698 acres, and the average taxable value per acre at \$22.76.

Agricultural Statistics.—The following statistics of agriculture in the State were compiled by the Secretary of State for his annual report for 1891: *Wheat*.—Acres sown in 1890, 2,266,012; bushels produced, 31,509,676; acres sown in 1891, 2,613,281. *Rye*.—Acres sown in 1890, 54,874; bushels produced, 618,238; acres sown in 1891, 67,062. *Buckwheat*.—Acres sown in 1890, 13,968; bushels produced 190,991. *Oats*.—Acres sown in 1890, 959,012; bushels produced, 19,049,033; acres sown in 1891, 886,946. *Barley*.—Acres sown in 1890, 31,446; bushels produced, 579,849; acres sown in 1891, 20,884. *Corn*.—Acres planted in 1890, 2,593,203; bushels (shelled) produced, 63,694,215; acres planted in 1891, 2,670,842. *Broom Corn*.—1,608 acres in 1890 yielded 564,998 pounds of broom brush. *Meadows*.—2,087,370 acres produced 2,863,284 tons of hay. *Clover*.—586,746 acres produced, tons of clover hay, 591,152; bushels of seed, 191,264. *Flax*.—18,056 acres produced, bushels of seed, 132,392; pounds of fiber, 3,704,111. *Potatoes*.—Acres planted in 1890, 114,569; bushels produced, 2,678,245; acres planted in 1891, 121,218. *Tobacco*.—39,283 acres produced 28,645,130 pounds. *Butter*.—Number pounds made in home dairies, 52,359,086; number pounds made in factories, 3,961,861. *Cheese*.—Number of pounds made in home dairies, 1,138,215; number of pounds made in factories, 17,080,062. *Sorghum*.—Acres planted, 6,577; pounds of sugar produced, 801; gallons of sirup produced, 415,282. *Maple*.—Number pounds of sugar, 1,465,972; number gallons of sirup, 997,148; number of trees tapped, 3,506,690. *Bees*.—Number of hives, 145,666; number of pounds of honey produced, 1,271,086. *Eggs*.—Number of dozens produced, 45,593,751, of which 1,328,919 were shipped beyond the State. *Grapes and Wine*.—Acres planted in 1890, 2,300; acres in vineyard in 1890, 24,870; pounds of grapes gathered, 25,027,289; gallons of wine pressed, 466,725. *Sweet Potatoes*.—Acres planted, 1,675; number of bushels pro-

duced, 123,348. *Orchards*.—Number of acres occupied, 483,718; bushels of apples produced, 1,731,491; bushels of peaches produced, 48,400; bushels of pears produced, 30,179; bushels of cherries produced, 14,231; bushels of plums produced, 9,173. *Lands owned in 1890*.—Number of acres cultivated, 9,697,085; number of acres of pasture, 6,237,610; number of acres of woodland, 3,768,038; number of acres lying waste, 454,461; total number of acres owned, 20,157,194. *Wool*.—Number of pounds shorn in 1890, 18,629,961. Number of milch cows, 613,507. Number of stallions, 6,060. Number of dogs, 153,892.

Legislative.—The adjourned session began Jan. 6 and closed May 4. The volume of laws enacted was larger than for many previous years. Among the more important were the following:

Providing for a secret ballot according to a modification of the Australian system. A "blanket ballot" is required, each party ticket on it to be headed by a distinctive device in addition to the name of the party. The State conventions subsequently held adopted the device of an American eagle for the Republican tickets, a rooster for the Democratic, a rose for the Prohibition, and a plow and hammer for the People's party. The law makes rigid provisions for secrecy and against corruption or intimidation.

Levying one twentieth of a mill on the grand duplicate for the support and maintenance of the Ohio State University, and giving all the State appropriation for colleges to the same university.

Increasing the amount of personal property allowed to be exempted from taxation from \$50 to \$100.

Disposing of the direct tax refunded by the General Government by placing \$1,000,000 to the credit of the sinking fund and \$332,000 to the credit of the general revenue fund.

Changing the system of compensation of county officials by paying salaries computed on the tax duplicates of the various counties.

Making it unlawful to employ in factories children under fourteen years of age.

The Corcoran building-and-loan association act places all such companies under the supervision of the superintendent of insurance, and provides for the appointment of an assistant. It also authorizes the codification of the laws governing the associations. It further provides that all foreign companies doing business in Ohio shall deposit \$100,000 in securities with the Treasurer of State as a guarantee to their patrons.

The Pennell school-book act constitutes the Governor and Secretary of State a commission to secure bids from and contract with school-book publishing houses to furnish the required text-books for a period of five years at a reduction of 25 per cent. from the present wholesale list prices.

The liquor question was dealt with in two laws. The Holliday law makes it unlawful for any minor to enter saloons. It imposes a fine against any saloon-keeper who knowingly permits a minor to remain in his place. Under this law both the minor and the saloon-keeper are amenable to the law. The Phillips law makes it unlawful to sell, vend, or traffic in intoxicating liquors in brothels.

Important insurance laws were enacted, among which are the following: To require life-insurance companies doing business in Ohio to make a detailed statement of expenditures to the commissioner of insurance, and prohibiting the use of such terms as "incidentals or all other expenditures," and also requiring that a statement be made to policy holders; to amend section 3654 so as to compel mutual companies organized under old charters to make return to the superintendent of insurance; amending section 3631 referring to assessment life associations so as to exempt ex-Union soldiers' organizations from the su-

pervision of the insurance department; amending sections 3654 and 3641 so as to provide for the formation and incorporation of live-stock insurance companies; preventing insurance companies from accepting risks sent them from agents outside of Ohio; amending section 282 by striking out the provision for computation, etc., and compelling every company to pay for each agent appointed, and giving the superintendent of insurance power to have policies of life-insurance companies valued and providing for payment of expenses; amending and supplementing section 3641 by providing for insurance against explosions and for insurance of employes; amending section 3669 by providing that no insurance company shall carry a case to the United States courts.

Regulating the employment of railroad engineers and conductors. No person can act as a conductor of any train unless he has had at least two years' experience as trainman or brakeman within five years next preceding his employment as conductor, and before any person is eligible to employment as an engineer he must have had at least three years' experience as a fireman.

Preferring \$300 for labor performed, in all cases of assignment, over all other claims.

Permitting the wife or husband to testify, in divorce or alimony proceedings, as fully as other persons.

Appropriating \$100,000 to secure an Ohio exhibit at the World's Fair in Chicago.

Appropriating \$40,000 for the preliminary steps toward the establishment of an epileptic asylum at Gallipolis.

Raising the age of consent from fourteen to sixteen years.

An amendment to the taxation clause of the Constitution was submitted for popular decision, providing that "laws may be passed taxing rights, privileges, franchises, and such other subject matters as the Legislature may direct."

Municipal Government.—A radical departure in the system of municipal government in Ohio was made by the enactment of a law affecting the city of Cleveland only. The law, which in its main provisions was the outcome of a popular movement in that city irrespective of party, completely divorces the legislative and executive functions of the municipal government, the former being confined to a city council of twenty members elected in ten districts, and the latter given into the control of the mayor, elected for two years by the people. The mayor appoints, with the approval of the council, six heads of departments, who, with him, form an executive board of control. Each head of department appoints his subordinates. The mayor can arbitrarily remove any member of the force, but when the head of a department removes a subordinate he must file written reasons with the mayor. The law went into effect at the April election.

The Supreme Court made an important decision in regard to legislation on municipal government in a case coming from Cincinnati. The State Constitution prohibits special legislation. The law passed at the extraordinary session of the Legislature in October, 1890, abolished the board of public improvements in Cincinnati, and substituted a board of city affairs, to be appointed by the mayor, and the bonds of the members to be approved by the judges of the Superior Court and the city solicitor. Cincinnati was not named in the act, which was made to apply to a "city of the first grade of the first class." The ousted members of the board of public improvements carried the case to the Su-

preme Court, on the ground that the law was special legislation. The majority of the court sustained the plea and declared the law unconstitutional, because no other city in the State has a superior court, which was created specially for Cincinnati.

Political.—The Prohibition State Convention was the first to be held. It met at Springfield, June 11. The platform denounced the liquor traffic; demanded revision of immigration and naturalization laws to prevent aliens voting until one year after naturalization; declared for woman suffrage; denounced speculation in margins; recommended pensions to soldiers and sailors, their widows and orphans, according to time of service. In addition it declared that

The tariff should be levied only as a defense against foreign governments that levy tariff upon or bar out our products from their markets, revenue being incidental; the residue of means necessary to an economical administration of government should be raised by a graduated income tax; non-residents, aliens, should not be allowed to acquire land in this country, and we favor the limitation of individual and corporate ownership of land; all unearned grants of land to railroad companies or other corporations should be reclaimed, and no further portion of the national domain should be thus granted; railroad, telegraph, and all other natural monopolies which owe their existence to grants of power from the people should be controlled by the people through their legislatures, in the interest of the people, and no higher charges allowed than necessary to make fair returns on capital actually invested. The circulation medium of the country may rightly consist of gold, silver, and paper. It should all be of full legal tender and sufficient in quantity to meet the demands of business and give full opportunity for the employment of labor. No private individual or corporation should be allowed to make any profit through issuing it. Neither should it be possible for any man or combination of men to produce an artificial scarcity and secure exorbitant rates.

The following nominations were made: Governor, J. J. Ashenhurst; Lieutenant-Governor, W. J. Kirkendall; Supreme Judge, Hewson L. Peeke; Attorney-General, W. H. Matthews; Treasurer, George W. Mace; Auditor, C. E. Reesor; Board of Public Works, P. A. Rodefer; School Commissioner, E. V. Zollars; Dairy Commissioner, Waldo F. Brown.

The Republican Convention was held at Columbus, June 16 and 17. The platform reaffirmed "devotion to the patriotic doctrine of protection," and recognized the McKinley bill as "the ablest expression of that principle, enacted in fulfillment of Republican promises," pledging the party to its support, "always having in view its improvement as changed conditions or experience may require." It favored "such legislation by Congress and in this State as will in every practicable mode encourage, protect, and promote the interests of agriculture in all its departments"; demanded "protection for the wool industry equal to that accorded to the most favored manufacturer of wool, so that in due time American wool growers will supply all wool of every kind required for consumption in the United States." On the money question it said: "Thoroughly believing that gold and silver should form the basis of all circulating medium, we indorse the amended coinage act of the last

Republican Congress, by which the entire production of the silver mines of the United States is added to the currency of the people." In the remaining resolutions of the platform the demand was made for "the enactment of laws that will protect our country and our people against the influx of the vicious and criminal classes of foreign nations, and the importation of laborers under contract to compete with our own citizens"; favoring "economy in the administration of national and State affairs, prompt and effective restraint of combinations of capitalists for purposes unlawful or at variance with sound public policy; ample educational facilities for the whole people; the reservation of the public lands of the United States for homesteads for American citizens, and the restoration of the public domain of all unearned railroad grants"; favoring "liberal pensions to the sailors and soldiers of the republic and a generous care of their widows and orphans"; approving the Harrison administration; commending the services of Senator Sherman and his Republican colleagues in Congress; approving the selection of Charles Foster for Secretary of the Treasury; and denouncing the Democratic State administration. The following ticket was nominated: Governor, William McKinley, Jr.; Lieutenant-Governor, Andrew L. Harris; Auditor, Ebenezer W. Poe; Treasurer, William T. Cope; Attorney-General, John K. Richards; Supreme Judge, Marshall J. Williams; Public Works, Charles E. Groce; School Commissioner, Oscar T. Corson; Dairy and Food Commissioner, F. B. McNeal.

The Democratic Convention was held at Cleveland, July 15 and 16. The platform approved the administration of Gov. Campbell and the Democratic Legislature, especially for having enacted a secret-ballot law. On tariff and finance it said:

We are opposed to all class legislation and believe in a tariff levied for the sole purpose of producing a revenue sufficient to defray the legitimate expenses of the Government, economically administered. We accept the issue tendered to us by the Republican party on the subject of the tariff, as represented by the so-called McKinley tariff act, confident that the verdict of the people of Ohio will be recorded against the iniquitous policy of so-called protection, championed by the Republican party in the interest of favored classes against the masses.

We favor a graded income tax.

We denounce the demonetization of silver in 1873 by the party then in power as an iniquitous alteration of the money standard in favor of creditors and against debtors, tax payers and producers, and which, by shutting off one of the sources of supply of primary money, operates continually to increase the value of gold, depress prices, hamper industry, and disparage enterprise; and we demand the reinstatement of the constitutional standard of both gold and silver with the equal right of each to free and unlimited coinage.

The platform denounced "the billion-dollar Congress"; congratulated the people "on the defeat of the odious force bill"; opposed the enactment of laws "which interfere unnecessarily with the habits and customs of any of our people which are not offensive to the moral sentiments of the civilized world"; favored laws giving a uniform system of municipal government in which executive and legislative powers shall be separated, the former to be lodged in a mayor

and the latter in a council, both to be elected by the people; favored closer commercial relations with Canada; just and liberal pensions to deserving and disabled soldiers and sailors who fought for the maintenance of the Government, and to their widows and orphan children; and expressed sympathy with the persecuted Jews in Russia. A minority report was presented, substituting the following for the coinage and income-tax planks:

We believe in honest money, the coinage of gold and silver, and circulating medium convertible into such money without loss; and we oppose all legislation which tends to drive either gold or silver out of circulation, and we believe in maintaining the coinage of both metals on a parity.

We also recommend that the resolution declaring for a graduated tax on incomes be stricken from the platform.

The minority report was defeated by a majority of 99 in a total vote of 700, and the platform was then adopted as reported by the majority of the committee. The ticket nominated was as follows: Governor, James E. Campbell; Lieutenant-Governor, William V. Marquis; Auditor of State, Thomas E. Peckinpaugh; Attorney-General, John P. Bailey; State Treasurer, C. F. Ackerman; Supreme Judge, Gustavus H. Wald; Commissioner of Schools, Charles C. Miller; Member Board of Public Works, John McNamara; Food and Dairy Commissioner, Ambrose J. Trumbo.

The People's party convention was held at Springfield, Aug. 6. The platform held that

"Labor is the basis of all wealth, happiness, and progress, and must have equal protection by the law"; that the Government shall be so administered as to secure equal rights to all people; that taxation, national, State, or municipal, shall not be used to build up one interest or class at the expense of another; the abolition of national banks as banks of issue and as a substitute for national-bank notes; that full legal-tender treasury notes be issued in sufficient volume to conduct the business of the country on a cash basis; payment of all bonds of the Government instead of refunding them in such money as they were originally made payable in; Government ownership of all the means of transportation and communication between and by the people of the United States; liberal pensions to all honorably discharged Union soldiers of the late civil war and generous care for their widows and orphans, and that the difference between the value of gold and greenbacks at the date of payment be made equal to gold, so as to place the soldier on the same footing as the bondholder has been; favored woman's suffrage, Government loans directly to individuals, free coinage of silver; opposed alien ownership of lands; and demanded that Congress devise a means of obtaining all land already owned by foreign syndicates; also demanded all lands held by railroads and other corporations in excess of what is actually needed be reclaimed by the Government and held for actual settlers only; demanded graduated tax on incomes.

On State matters the platform favored a constitutional amendment preventing changes in the forms of municipal government for partisan purposes and requiring the consent of the people to any such changes; also a constitutional amendment requiring submission of proposed legislation to the popular vote in certain conditions; the enactment and rigid enforcement of laws preventing gambling in futures; the election of United States Senators by the people; the

rigid enforcement of laws against the adulteration and counterfeiting of food and drink products; free school books and compulsory education. The Standard Oil Company was denounced for joining the trust and a demand made for the forfeiture of its charter. The following ticket was nominated: Governor, John Seitz; Lieutenant-Governor, Frank L. Rist; State Auditor, David W. Cooper; Attorney-General, Riall N. Smith; Treasurer, Henry Wolf; Judge of Supreme Court, Alfred M. Yaple; School Commissioner, J. E. Peterson; Member Board of Public Works, J. S. Borror; Dairy and Food Commissioner, W. J. Weaver.

The canvass that followed the conventions was one of the most remarkable in the history of the State. The nomination by the Republicans of William McKinley, the reputed author of the new tariff law, forced the tariff issue sharply to the front, and the entire campaign was fought on national issues. Gov. Campbell was prevented by illness from taking an early part in the contest, but Major McKinley began making speeches throughout the State soon after the conventions had been held. The canvass was noticeable also for the entire absence of personalities, which had been an unpleasant feature of most previous gubernatorial campaigns in Ohio. The Republican and Democratic candidates were warm personal friends, and used their influence with their respective supporters to this end. Once during the campaign the two leading candidates met in joint debate at the village of Ada, crowds coming from the surrounding country to hear the discussion of the tariff. Much of the interest in the campaign arose from speculation as to the strength of the new People's party. In addition to the election of State officers, the people were to vote on a constitutional amendment enlarging the legislative power over taxation, and also on the question of holding a constitutional convention to revise the Constitution, that instrument requiring the submission of the question every twenty years. The election was held Nov. 3, with the following result: Governor, William McKinley, Jr. (Republican), 386,739; James E. Campbell (Democrat), 365,228; John J. Ashenhurst (Prohibition), 20,190; John Seitz (People's), 23,472; Republican plurality, 21,511. On the vote for the other offices the Republican plurality varied from 27,000 to 29,500. On the taxation amendment the vote was: Yes, 303,177; No, 65,014. On the Constitutional Convention—Yes, 99,784; No, 161,722. As the total vote cast at the election was 803,228, requiring 401,615 for the adoption of a constitutional amendment, both constitutional propositions were defeated.

OKLAHOMA, a Territory of the United States, organized by act of Congress approved May 2, 1890; area (including the Cherokee country and No Man's Land), 89,030 square miles; population (including Greer County, claimed by Texas), according to the census of 1890, 61,834. Capital, Guthrie.

Government.—The following were the Territorial officers during the year: Governor, George W. Steele, Republican, who resigned in October; Secretary and acting Governor after the Governor's resignation, Robert Martin; Treasurer, W. T. Higgin; Auditor and Superintendent of Pub-

lie Instruction, J. H. Lawhead; Attorney-General, Charles Brown; Chief Justice of the Supreme Court, Edward B. Green; Associate Justices, Abraham J. Seay and John G. Clark.

Valuations.—The assessed valuation of property in the Territory, as fixed this year for the first time by the first Territorial Board of Equalization, is as follows: Payne County, \$417,667.15; Oklahoma County, \$1,938,408.59; Logan County, \$1,278,080.69; Kingfisher county, \$779,890.92; Cleveland County, \$982,919.67; Canadian County, \$757,681.50; Beaver County, \$724,274.52; total, \$6,893,389.95. The rate of taxation for Territorial purposes in 1891 was 3 mills for the general revenue fund, $\frac{1}{2}$ mill for the university fund, and $\frac{1}{4}$ mill for the normal school fund.

Legislation.—The following is a summary of the more important enactments of the first Territorial Legislature, which adjourned on Dec. 24, 1890:

Assenting to the act of Congress establishing agricultural experiment stations in the various States.

Establishing an agricultural and mechanical college for the Territory, and locating it in Payne County, provided said county, or the municipality in which the college shall be located, shall appropriate \$10,000 therefor. Both sexes shall be admitted as students.

Providing for the appointment of a county inspector of hides and animals.

To prevent the importation of diseased cattle or cattle coming from infected districts.

To provide for the registration of stock brands or marks.

Prescribing the qualifications, powers, and duties of attorneys and counselors at law.

Creating a Territorial board of health, and prescribing the qualifications demanded of medical practitioners in the Territory.

Authorizing the issue of bonds for payment of the contingent expenses of the Territorial, county, and city governments until such times as revenue may be derived for that purpose from taxation.

Authorizing the county commissioners of each county to offer a bounty not to exceed \$3 for each gray wolf and \$1 for each coyote killed within the county.

Providing for the taking of a census of the Territory as of the first Monday of February, 1891.

Regulating conveyances of real property, and prescribing a short form for deeds and mortgages.

To regulate the practice of dentistry.

To regulate the sale of drugs, medicines, and poisons.

Providing a general law for the conduct of elections.

Authorizing each county to appoint a commissioner and a lady assistant, whose duty it shall be to procure an exhibition of the industries and resources of the Territory at the World's Columbian Exposition, and authorizing each county to expend not over \$1,000 therefor.

To prevent and punish the setting of prairie fires.

Providing a fish and game law.

Making provision for the care of the insane at some insane asylum in another Territory or State.

To incorporate and govern insurance companies doing business in the Territory.

To organize and regulate the business of life insurance.

To provide for the organization of the Legislative Assembly of the Territory.

Providing for a Territorial library.

Providing for the organization of a Territorial militia.

Locating and establishing a Territorial normal school at Edmond, in Oklahoma County, on a site

to be given to the institution, and authorizing said county to issue \$5,000 in bonds, the proceeds to be devoted to the school.

To regulate the settlement and support of the poor. Prescribing a code of civil procedure.

Establishing a system of public schools, at the head of which shall be a Territorial superintendent.

Creating the offices of Territorial Auditor, Territorial Treasurer, and Territorial Attorney-General, and prescribing the duties of each.

Defining the powers and duties of Governor.

Providing for the organization of municipal townships.

To prevent combinations in restraint of trade.

Locating at Norman, in Cleveland County, a Territorial university, provided 40 acres of land are given for its use, and authorizing that county to sell bonds to raise \$10,000, which shall be expended for buildings.

To provide for the security of bank depositors.

The election law of this session introduces the Australian or secret-ballot system. It provides that a Territorial board of three election commissioners shall prepare and distribute the ballots for the election of officers for whom all the electors of the Territory are entitled to vote, and that a county board of election commissioners in each county shall prepare and distribute the ballots for all other officers to be voted for in the county. Candidates must be nominated by the convention or caucus of a political party that cast 1 per cent of the total vote of the Territory in the last general election, or by nomination papers signed by 500 qualified electors when the candidate is to be voted for throughout the Territory, by 25 qualified electors if the candidate is to be nominated for a county office, for member of the Legislature, or for prosecuting attorney, and by 20 qualified electors, if for an officer of any township, ward, or other division less than a county. The names of all candidates filed with the respective boards of commissioners shall be printed on one ballot, all nominations of any party or group of petitioners being placed under the title and device of such party or petitioners. All ballots prepared by the Territorial board shall be printed on red tinted paper, and all prepared by the county boards on white paper. Polling places shall contain two booths, in which electors may prepare their ballots screened from observation. There shall also be provided a chute or passage-way with a railing, rope, or wire on each side, beginning 50 feet away from, and leading to each polling place past a window at which the elector may be challenged. On entering the room from the passage-way the elector shall receive from the poll clerks a Territorial and a local ballot and a stamp, shall enter one of the booths and prepare his ballot by stamping the square space opposite the name of the candidate for whom he wishes to vote; but a stamp opposite the party name shall be considered a vote for all the candidates of that party, except that if the elector also stamps the space opposite the name of one or more candidates of another party, he shall be considered to have voted for those, instead of the corresponding candidates of the party opposite to whose name he has stamped. All election days shall be legal holidays. The act shall take effect on and after March 1, 1891.

The liquor law prohibits selling on Sundays, on election days, and between the hours of twelve

and five in the morning. Gambling in saloons is prohibited. Sales to minors and to habitual drunkards are forbidden. The retail license fee is \$200, but cities and towns may impose an additional fee of from \$100 to \$500. The wholesale license fee is \$25. There shall be no screens, blinds, or painted windows to conceal the business of liquor selling.

Education.—A school system for the Territory was not provided by the first Legislature till late in the session. As a result, several districts failed to organize in time to have any schools during the first school year, which ended on June 30, 1891. In the act of May 2, 1890, organizing the Territory, Congress appropriated \$50,000 to provide temporary support for schools until taxes could be levied and collected therefor. Of this sum, \$37,581 were expended during the school year for salaries of teachers and \$3,439.17 for other school purposes. The following statistics cover the period from January to June 30, the first six months of the operation of the school law: School townships organized, 111; school districts organized, 400; school population, between six and twenty-one years, 21,337 (of whom 20,085 were white, and 1,252 colored); pupils enrolled in the public schools, 9,893; average daily attendance, 5,596; teachers employed, 438; average monthly salary of male teachers, \$32.56; average monthly salary of female teachers, \$27.12. During the year normal schools, lasting two weeks each, were held in each county in the Territory, at which 369 teachers were enrolled.

On Dec. 15 the first session of the Agricultural College was opened at Stillwater. This place was selected as the location for the institution by the commissioners in consideration of the gift of 200 acres of land adjoining the city as a site for the college.

Agriculture.—According to the report of the Governor in October there were then 1,000,453 acres used for farming in the Territory, of which 287,831 acres were fenced and 712,622 were unfenced. The value of the farms with improvements was \$4,938,630. The live-stock on hand on Feb. 2 was as follows: Horses, 16,003; mules, 3,296; cows, 16,709; other cattle, 42,825; sheep, 8,123; swine, 10,684. In the autumn of 1890 27,077 acres of land were sown for winter wheat, and in the spring of 1891 85,675 were prepared for corn, 7,770 for oats, 14,930 for sorghum, 300 for flax, 30,686 for cotton, 1,126 for broom corn, 272 for pea-nuts, 5,125 for Hungarian and millet, and 2,072 for Irish and sweet potatoes.

Statehood Convention.—So rapid was the growth of population in the Territory during the first year of its existence that before its close the people began to consider seriously the propriety of demanding admission to the Union as a State. The Territorial press united in urging Statehood, and a Territorial convention was called, to meet at Oklahoma City on Dec. 15, for the purpose of publicly expressing the popular will and of providing means to secure the end desired. The convention was largely attended by delegates from all parts of the Territory. There was considerable difference of opinion on the question whether the Territory should ask for admission as one or as two States, the delegates from the western section generally favoring two States, one in the east and one in the west; but

a majority of the convention decided in favor of a single State, and resolutions for the appointment of a committee to ask Congress for an enabling act were passed.

Indian Lands opened.—During the year, as a result of the action of Congress and the President, nearly 800,000 acres of land in the Territory formerly held by the Indians were opened to white settlers. By an act approved Feb. 13, Congress ratified the agreements made with the Sac and Fox Indians on June 12, 1890, and with the Iowa Indians on May 20, 1890, by the commissioners appointed by the President to treat with the Indian tribes of the Indian Territory, and by the same act it was provided that the lands ceded under these agreements should be opened for settlement. Later, there was incorporated in the Indian appropriations bill, which was approved March 3, a ratification of the agreements made by the same commissioners with Pottawatomie Indians on June 25, 1890, with the absentee Shawnees on June 26, 1890, and with the Cheyenne and Arapahoe tribes in October, 1890. All these agreements provided for the allotment of certain portions of the ceded Indian land in severalty to the members of each tribe, and for the opening of the remainder to white settlers. During the summer months such allotments were made for all the tribes except the Cheyennes and Arapahoes (the appropriation for this purpose in case of the latter tribes being exhausted before the allotment could be completed), and by proclamation on Sept. 18 the President declared the lands so ceded by the Sac and Fox, Iowa, Pottawatomie, and absentee Shawnee tribes to be open for settlement on Sept. 22 at twelve o'clock noon. The exact area opened, as stated in the proclamation, was 266,243 acres. There was a large gathering of intending settlers on the borders of the new lands, and when the appointed hour arrived a rush for locations began similar to that which occurred when the original Oklahoma lands were entered. Two counties were formed out of the new Territory, which adjoins the eastern border of the original Oklahoma, the respective county seats being named Tecumseh and Chandler. The lands of the Cheyennes and Arapahoes, which will be ready for settlement as soon as the allotments are made, contain about 3,000,000 acres. Agreements have been made during the year by the commissioners with the Wichitas, the Kickapoos, and the Tonkawas for the cession of other lands to the United States, negotiations for extinguishing the Indian title to the so-called Cherokee strip are already far advanced, and in the near future the area of Indian lands in the Territory will be reduced to small dimensions.

ONTARIO. By a recent delimitation the previously accepted boundaries of Ontario were extended north and west, so as to make the area of that province nearly equal to that of Quebec. Their present respective areas are stated to be: Quebec, 188,688, and Ontario, 181,100 square miles. The population of Ontario by the census of 1891 was 2,112,989, the increase for the preceding decade being 186,067, or at the rate of 9.65 per cent. As usual, the increase in cities, towns, and villages far exceeds that of the rural districts. The population of Toronto, the provincial capital, was found to have increased since

1881 to 181,220, or at the rate of 88.4 per cent. Ottawa, the Dominion capital, had enlarged its population during the decade at the rate of 41 per cent. Nearly all the other cities, towns, and villages show a large increase in population in proportion to the rural districts.

Legislative.—The legislative session, which was opened on Feb. 11, 1891, was the first session of the seventh Legislative Assembly of Ontario. The provincial general election which produced this House was a strictly party conflict, yet the issues were definite and distinct. The principal contention of the Opposition—sometimes called the Conservative or Tory party, led by Mr. W. R. Meredith, was in favor of reform of the educational institutions of the province and with especial view to the abolition of separate schools, or at least the sustentation of separate schools as a part of the common-school system of the province. In Ontario the Roman Catholics have the special privilege of maintaining their schools separate and apart from those of other religious denominations, or from the ordinary public schools. Protestants enjoy a like privilege in the province of Quebec, but in the latter province Roman Catholicism is a state church, and the schools which it sustains avowedly teach Roman Catholic religious tenets. The recent canvass in Ontario on these points was able and vigorous, but the efforts of the advocates of essentially free schools were in vain. As was shown during the ensuing session, the Mowat administration was, in a full House of 93 members, usually sustained by a majority of about 20 votes. In his speech at the opening of the legislative session of 1891 Lieut.-Gov. Campbell complimented the House on the advance made "toward a settlement of most of the long-pending differences between the province and the Dominion"; upon "the increasing interest which was taken in improved methods of agriculture"; in the work done in "promoting the public health"; in the "subject of prison reform"; and in that of the "fish and game laws." Among other matters to which he called attention he stated thus: "It having recently been ascertained beyond doubt that the province possesses immense deposits of nickel, a metal which is likely to be of great economic use and value in the immediate future, my advisers deemed the time opportune for making some changes in the laws relating to the sale of mining lands, and a part of the districts of Algoma and Nipissing, in and near the nickel-bearing region, was withdrawn from sale and location until you could be consulted. I commend to your attention a measure respecting our mining which is to be submitted for your consideration." The result of this intimation was the passing of important amendments to the "General Mining act," setting forth the prices of crown lands to be appropriated for mining purposes. The districts specially indicated for such appropriations are Algoma, Thunder Bay, and Nipissing, which are known to abound in silver, nickel, and copper, and the prices range from \$2 to \$4.50 an acre, according to location. The grantee of any mining location shall, during the seven years immediately following the date of his patent, expend in opening up his mines \$4 an acre if his patent exceeds 160 acres, and \$5 an acre if his area is less than 160 acres; and in default of such

expenditure his lands shall revert to the Crown. All ores and minerals mined upon such lands shall be subject to a royalty, if of silver, nickel, or nickel and copper, 3 per cent. All other ores, except iron, shall be subject to such royalty as shall be from time to time imposed by order in council not exceeding 3 per cent., and iron ore not exceeding 2 per cent. No royalty is to be collected until seven years after the date of the patent or lease, except as to those mines known to be rich in nickel; and as to these, until four years. Instead of granting mining lands in fee simple, the same may be leased for ten years; and such leases may, upon stipulated conditions, be renewed for further terms of ten and twenty years. The lessee may, at any time during his leasehold tenure, become the purchaser of the lands upon certain conditions. The other more important measures passed during the session were an act making certain improvements in the election laws; a series of acts consolidating, revising, and amending the laws respecting the education department, the public-schools acts, the act respecting truancy and compulsory school attendance, the high-schools act, and acts respecting industrial schools and the establishment of mining schools; and an act securing a lien to workmen on saw-logs. The financial affairs of the province were found to be in a satisfactory condition, and the receipts of revenue from all sources considerably exceeded the general expenditure.

OREGON, a Pacific Coast State, admitted to the Union Feb. 14, 1859; area, 96,030 square miles. The population, according to each decennial census since admission, was 52,465 in 1860; 90,923 in 1870; 174,768 in 1880; and 313,767 in 1890. Capital, Salem.

Government.—The following were the State officers during the year: Governor, Sylvester Pennoyer, Democrat; Secretary of State, Auditor, and Insurance Commissioner, George W. McBride, Republican; Treasurer, Philip Metshau; Attorney-General (an office created by the Legislature of this year), George E. Chamberlain, appointed May 20; Superintendent of Public Instruction, E. B. McElroy; Railroad Commissioners, J. H. Faull, George W. Colvig, and Robert Clow; Chief Justice of the Supreme Court, Reuben S. Strahan; Associate Justices, William P. Lord and Robert S. Bean.

Finances.—The balance in all funds of the State treasury on Jan. 12, 1891, was \$233,144.29, of which the general fund balance was \$47,664.71. The receipts of this fund for the year were not equal to the demands against it, so that before October the balance had been wiped out, and the State Treasurer was unable to pay warrants. This result was produced largely by the action of the Legislature in making greatly increased appropriations for the year. The actual payments from the general fund for the year amounted to \$508,580.49, while the receipts, including the balance of \$47,664.71, were slightly in excess of these figures, but there remained outstanding at the close of the year unpaid warrants amounting to about \$166,000.

The total taxable property of the State for 1891 was assessed at \$114,077,788, against \$101,593,341 for 1890. The tax rate for State purposes in 1891 was 4 mills for the general fund,

$\frac{1}{2}$ mill for the State university, and $\frac{1}{2}$ mill for the militia—a total of $4\frac{1}{2}$ mills.

There is no bonded State debt, except to the amount of \$1,665.40 on which interest has long since ceased.

Legislative Session.—The regular biennial session of the Legislative Assembly began on Jan. 12, and ended on Feb. 20. On Jan. 20 United States Senator John H. Mitchell, Republican, was re-elected for the term of six years, from March 3, by the following vote: Senate, Mitchell 22, B. Goldsmith (Democrat) 6; House, Mitchell 41, Goldsmith 19.

A new election law was enacted containing provisions for a secret ballot, according to the Australian system. Candidates whose names are entitled to appear on the official ballots provided by the act must be nominated either by a convention of delegates of a political party which at the preceding election cast at least 3 per cent. of the entire vote cast in the State, county, or district for which the nomination is made, or by an organized assembly containing at least 100 electors of the State or electoral division for which the nomination is made, or by nomination papers signed as follows: By at least 250 electors if the candidate is to be voted for by the electors of the State at large, by at least 50 electors if he is to be voted for by the electors of an electoral district or county, and by at least 10 electors in other cases. The official ballots shall be prepared by the respective county clerks, and shall be of uniform size. They must be printed in black ink upon white paper. They shall contain the names of all candidates duly nominated, arranged under the designation of the office in alphabetical order, according to surnames, except that the names of candidates for electors of President and Vice-President shall be arranged in groups, as presented in the several certificates of nomination. Blank spaces shall be left for writing in the names of other candidates. The ballots shall be printed so as to give each elector a clear opportunity to designate his choice of candidates, and his answers to questions submitted, by canceling or marking out the names of candidates who are not his choice, or the answer he does not wish to make. Each polling place shall be provided with at least one voting shelf or compartment for every 40 electors entitled to vote thereat. Before any elector receives his ballot, the ballot clerk shall write his own initials on the back thereof.

An act of great importance to eastern and southern Oregon provides for the regulation of irrigation. By its terms the use of waters in the lakes and running streams of the State for general rental, sale, or distribution for purposes of irrigation and supplying water for household and domestic consumption, and watering live stock upon dry lands of the State is declared a public use, and the right to collect rates therefor a franchise. A corporation formed for the above-mentioned purposes may appropriate water from its natural bed, and condemn rights of way for its ditch, rights of riparian proprietors, and lands for sites of reservoirs; but the right of way for the main line shall not exceed 100 feet in width, and for each distributing ditch 30 feet, and for a reservoir site 20 acres from one owner.

An act to increase the powers of the railroad commissioners requires all railroad corporations within ninety days after the passage of the act to furnish the commission with a schedule of charges for transportation. These are to be revised by the commission, and if the rates so fixed are not accepted by the corporations, suits may be begun by the commission to have such rates adjudged just and reasonable. The commission shall investigate all complaints against the railroad companies, and may bring suit in the circuit court in the name of the State to have its declarations enforced. The commission must make a semi-annual examination of all bridges, and if any are reported by them as unsafe and are not repaired within ten days the commission may stop trains from crossing such bridges.

For the purpose of aiding transportation on Columbia river an act was passed, constituting the Governor, Secretary of State, and State Treasurer a board of portage commissioners, with power to build, construct, run, equip, operate, and maintain a portage railway between the highest and lowest points of the navigable waters of Columbia river at the Cascades and between highest and lowest points of that river between the Dalles and Celilo. The sum of \$60,000 was appropriated for these improvements.

An act to promote the fishing industry provides that every person or corporation engaged in canning, preserving, dealing in, packing, shipping, buying from first hands, or speculating in salmon or any variety thereof, shall pay to the State Treasurer half of 1 cent apiece for Chinook salmon, and one-fourth of 1 cent apiece for "silversides." Persons and corporations engaged in this business on Columbia river and vicinity shall also pay one sixth of 1 cent for "steel heads" and one sixteenth of 1 cent for "blue backs." The money so collected shall be held as a fund for the benefit of the salmon industry.

A State board of equalization was established. The office of Attorney-General was created, and authority was given to the Governor to appoint an incumbent until the election of 1894.

The State was divided into two Congressional districts composed of the following counties:

1. Benton, Clackamas, Coos, Curry, Douglas, Jackson, Josephine, Klamath, Lake, Lane, Linn, Marion, Polk, Tillamook, Washington, and Yamhill.
2. Baker, Clatsop, Columbia, Crook, Gilliam, Grant, Harney, Malheur, Morrow, Multnomah, Sherman, Umatilla, Wallowa, and Wasco.

The sum of \$60,000 was appropriated for completing the dome of the Capitol building, providing heating apparatus therefor, and making other improvements therein.

Congress was memorialized in favor of action to secure the election of United States Senators by direct vote of the people.

Other acts of the session were as follow:

To regulate the manner of holding primary elections, and to prevent fraud and crime at such elections, in cities of 2,500 inhabitants or more.

To regulate the taking of salmon.

Establishing a State board of charities and corrections.

Assenting to the act of Congress appropriating money for the more complete endowment of colleges of agriculture and the mechanic arts, and appropriating \$25,000 for the erection of a dormitory and other

buildings at the State Agricultural College at Corvallis.

Appropriating \$1,000 to establish a library for the use of convicts in the State Penitentiary.

Giving to laborers and material men a lien upon mines for or on which their labor and material are used.

To punish minors over sixteen years of age for obtaining or attempting to obtain intoxicating liquors under false pretenses.

To make employes and laborers preferred creditors to the extent of \$100 each.

To protect the title of owners of floating logs, timber, and lumber.

Giving to any person who clears any land, or improves it by ditching, diking, or tiling a lien on such land for his labor.

To provide for the further establishment and development of the State Reform School.

Revising the law regulating liens of laborers in timber and logging camps.

To regulate the practice of pharmacy and the sale of poisons.

To license and regulate life and casualty insurance companies and societies.

Granting to railroads hereafter constructed a right of way through lands of the State on paying \$1 an acre therefor, and also the right to take timber, stone, and water, and necessary ground for depots, side tracks, turn tables, and water stations.

Education.—The following statistics cover the school year ending in 1891: Children of school age (four to twenty-one years), 106,172; children enrolled in public schools, 72,322; enrolled in private schools, 6,666; not attending any school, 29,616; male teachers in the public schools, 1,059; average monthly salary, \$49.10; female teachers, 1,582; average monthly salary, \$41.00; teachers in private schools, 296; value of school property, \$1,906,431.90; school districts in the State, 1,747; school-houses built during the year, 113. There are 50 universities, colleges, and academies in the State, employing 234 teachers and having 4,879 pupils.

The State Normal School at Monmouth is flourishing, the number of pupils in attendance at the close of this year being 345. At the State University 352 pupils were enrolled during the year ending in June, of whom 217 were in the collegiate department, 86 in the law department, and 20 in the medical department. The receipts for the year were \$27,996.12 and the disbursements \$25,368.20.

Insane Asylum.—There were 628 patients at the State Insane Asylum on Jan. 1. The number had increased to 722 on Nov. 1, and before the close of the year the limit to the capacity of the institution was reached. The increase of patients for the year was nearly equal to the total increase for the two preceding years.

The Prison.—At the close of the year there were 384 convicts in the State Penitentiary, of whom 217 were employed in the foundry, 44 were unable to work, 56 had no employment, and the remainder were engaged in and about the prison buildings.

Fisheries.—Statistics of the State Fish Commission, for 1891 show that there were packed on the Oregon side of Columbia river 245,550 cases of salmon, or 11,786,400 pounds, valued at \$1,227,750; Nehalem river, 3,500 cases, or 168,000 pounds, valued at \$14,000; Tillamook Bay, 3,850 cases, or 184,000 pounds, valued at \$15,400; Coquille river, 4,000 cases, or 192,000

pounds, valued at \$16,000; Rogue river, 21,000 cases, or 1,008,000 pounds, valued at \$105,000; total for Oregon, 277,900 cases, or 13,338,400 pounds, valued at \$1,378,150.

There are 13 canneries in Oregon on Columbia river, with buildings and machinery valued at \$180,000, and 12 in other parts of the State valued at \$56,000.

The total number of men employed in the fishing industry is 2,590; the average rate of wages for the fishing season \$245.06, and the total amount paid in wages \$634,720.

Hops.—The production of hops in 1890 in the State is shown by counties in the following table:

COUNTIES.	Acres.	Pounds.	Value.
Benton.....	16	15,180	\$5,768
Clackamas.....	370	439,022	98,407
Douglas.....	49	48,216	10,559
Josephine.....	55	55,330	8,552
Lane.....	750	829,128	243,466
Linn.....	400	408,602	120,192
Marion.....	985	1,287,582	357,805
Multnomah.....	7	12,097	4,150
Polk.....	344	437,563	131,726
Union.....	15	14,600	4,380
Washington.....	71	95,449	17,902
Yamhill.....	161	163,580	45,982
Total.....	3,223	3,811,349	\$1,047,224

Coal.—Out-croppings of coal have been found in nineteen counties in Oregon, both east and west of the Cascade range, but mining operations are reported only in Coos County. These mines are at Marshfield, on Coos bay. The Coos County field covers an area of several hundred square miles, and is a fair quality of lignite.

Portage Railroad.—The commission appointed by the Legislature this year to build portage railways around the rapids of Columbia river, after trying without success to obtain assistance from the United States, decided in May to apply all the money at their disposal to building and equipping a railway around the Cascades, so-called, in that river. An engineer was appointed, under whose direction the work had been nearly completed at the end of the year, at a cost within the appropriation. The length of the road is seven eighths of a mile.

The World's Fair.—The Legislature of this year adjourned without appropriating money to secure a State exhibit at the World's Fair, although a bill for that purpose was presented for its consideration. The State Board of Agriculture thereupon appointed a committee, which issued a call in March for a convention of representative men to meet at Portland on June 15. There were no substantial results from this movement, however, and in October the State Board of Commerce undertook the problem. A committee was appointed, and under its direction subscription papers were put in circulation, but up to the close of the year no encouraging progress had been made in raising funds.

Decision.—The State Supreme Court in April, in the case of Maxwell vs. Tillamook County, rendered a decision declaring unconstitutional an act of the Legislature of 1889 appropriating money to aid in building a wagon road in the defendant county. The act was found to be repugnant to the clause of the State Constitution forbidding local and special legislation.

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PARAGUAY, a republic in South America. The Constitution of Nov. 25, 1870, vests the legislative power in a Senate and House of Deputies, the members of which are elected by direct suffrage, one Senator to 12,000 and one Deputy to 6,000 inhabitants. The President, who is elected for four years, exercises the executive power in consultation with a Cabinet of four ministers, who are responsible to Congress. Juan G. Gonzalez was elected President on Sept. 25, 1890. His Cabinet is composed of the following members: Juan C. Centurion, Secretary for Foreign Affairs; Juan Sosa, Minister of Finance; Dr. Carlos Gondra, Minister of Justice; and Gen. Duarte, Minister of War.

Area and Population.—The area of the republic is 91,970 square miles. The population was reduced by war from 1,337,439 in 1857 to 221,079 in 1873. The census of March 1, 1887, which is imperfect, made the population in that year 329,645, comprising 155,425 males and 174,220 females. This does not include about 60,000 half-civilized and 70,000 savage Indians. The number of foreigners was estimated at 17,000, of whom 5,000 are Argentinians, 2,500 Italians, 1,500 Spaniards, 1,150 Germans, 700 French, 600 Brazilians, 600 Swiss, 450 Austro-Hungarians, and 200 British. The number of immigrants in 1888 was 1,064; in 1889, 1,495; in 1890, 1,419. Asuncion, the capital, had 24,038 inhabitants in 1886. The Government maintains a military force of only 100 officers and 1,400 men, and has no navy except a screw steamer of 440 tons, carrying four guns, and two small river steamers.

Finances.—The receipts of the treasury in 1890 amounted to 2,736,113 pesos, of the approximate value of 66 cents. Of this sum, 1,183,426 pesos were derived from custom duties, 337,527 pesos from sales and leases of land, and 215,160 pesos from other sources. The disbursements were 2,116,357 pesos, 913,104 pesos being spent for war and the navy, 628,324 pesos for the interior, 198,569 pesos for financial administration, 284,511 pesos for justice, worship, and public instruction, and 101,849 pesos for foreign relations. The public debt on Jan. 1, 1890, amounted to 32,969,471 pesos, of which 23,701,046 pesos represent the external debt, 724,485 pesos the internal debt, 194,934 pesos deposits, 2,768,506 pesos floating liabilities, and 5,580,500 pesos cedulas.

Commerce and Agriculture.—The imports in 1890 were valued at \$2,726,000, and the exports at \$3,564,000. The principal exports are yerba or maté, called sometimes Paraguay tea, cigars and tobacco, hides and skins, oranges, and woods. There were 730,000 cattle in the country in 1887. The production of corn, wheat, rice, and manioc are not more than sufficient for home consumption. There are three agricultural settlements of foreigners assisted by the Government. The value of the public lands alienated during 1889-'90 was \$809,125, and the rent paid for Government forests in that year was \$14,045. The plants and trees growing wild in the country yield an extraordinary va-

riety of commercial products, including algaroba and quebracho for tanning; indigo, annatto, and many other coloring materials; palm, pine-apple, mapajo, and other fibers; copal, dragon's blood, gum elastic, and balsams in great variety; and copaiba, jalap, sarsaparilla, nux vomica, and other medicinal drugs. In 1889 there were 933 vessels, of 36,503 tons, entered and 930, of 33,735 tons, cleared at the port of Asuncion. This city is connected with Villa Rica by a railroad 92 miles long, on which the receipts in 1887 were 161,550 pesos and the expenses 111,337 pesos. Beyond Villa Rica an extension through the southern part of the republic in the direction of the Parana river had been carried 60 miles before the beginning of 1891. Another extension is projected, which will join the Brazilian system at Santos. About \$5,000,000 of English capital has recently been invested in the country. The Anglo-Paraguayan Company has bought a large tract in the neighborhood of Villa Rica for the purpose of settling an agricultural colony upon it. To encourage immigration the Government offers free passage to agricultural colonists and their families. The small farmers are now at a disadvantage, however, because the good land within access of the markets has been bought by companies which hold it for enhanced prices. The small breed of native Brazilian cattle is being improved by crosses with European stock. The Argentine crisis affected the banks and mercantile houses of Paraguay, and caused a decline in the exchange value of the paper money. Buenos Ayres speculators had begun to buy large quantities of land in Paraguay in the hope of an immediate rise. The crash has produced a check in the rate of progress and a withdrawal of capital.

Attempted Revolution.—The Liberals, who were defeated in the elections of 1890, attempted to overthrow President Gonzalez in October, 1891. A spirit of hostility to the Government had been growing for some time, and at last the opponents of the Administration collected and armed the most desperate of their adherents, issued an address to the people accusing the President of a tyrannical abuse of power and breaches of the Constitution, and, led by Major Vera and Deputy Machin, attacked the barracks at Asuncion, which were occupied by the regiment of Col. Mino. The fighting was fierce and bloody for a few minutes, and then both the leaders of the insurrection fell. The loss of their commanders demoralized the rebels, who broke and fled, leaving 10 killed besides their leaders. They escaped to the Argentine frontier and surrendered their weapons to the Argentine authorities. On the Government side Col. Mino, Col. Ossura, and 6 men were killed. This ended the revolution.

PATENTS. The receipts, expenditures, and work of the United States Patent Office for the three years ending Dec. 31, 1892, are condensed from the commissioner's reports in the table on the next page.

TRANSACTIONS.	1889.	1890.	1891.
<i>Receipts over expenditures:</i>			
Receipts.....	\$1,281,728 05	\$1,340,872 66	\$1,271,285 73
Expenditures.....	1,052,956 96	1,099,297 74	1,189,718 85
Receipts over expenditures.....	\$228,772 09	\$241,074 92	\$181,572 43
<i>United States Treasury statement on account of patent fund:</i>			
Amount to credit of fund.....	\$3,402,898 28	\$3,631,670 32	\$3,872,745 24
Amount of receipts.....	1,281,728 05	1,340,872 66	1,271,285 73
Total.....	\$4,684,626 28	\$4,972,042 98	\$5,144,031 02
Deduct expenditures.....	1,052,956 96	1,099,297 74	1,189,718 85
Balance, Jan. 1, 1890, 1891, 1892.....	\$3,631,670 32	\$3,872,745 24	\$4,004,317 67
<i>Summary of the business:</i>			
Applications for patents for inventions.....	39,607	39,584	39,418
Applications for patents for designs.....	857	1,046	1,025
Applications for reissues of patents.....	111	118	109
Total number of applications.....	40,575	41,045	40,552
Caveats filed.....	2,431	2,311	2,408
Applications for registration of trade-marks.....	1,336	1,087	1,906
Applications for registration of labels.....	828	875	693
Disclaimers filed.....	15	5	29
Appeals on the merits.....	1,141	1,330	1,136
Total.....	5,851	6,208	6,177
Total number of applications requiring investigation and action.....	46,426	47,256	46,729
Patents issued, including designs.....	24,038	26,203	28,164
Patents reissued.....	75	84	80
Trade-marks registered.....	1,229	1,415	1,762
Labels registered.....	819	304	187
Total.....	25,706	28,011	30,210
Patents expired during the year.....	12,200	11,616	12,530
Patents withheld for non-payment of final fee.....	3,006	3,559	3,456

The number of the last patent issued in 1891 was 466,321. Connecticut still maintains her traditional leadership as regards ratio of patents to population (1 patent to 1,018 souls in 1891), but Massachusetts is close behind, with 1 patent to 1,055. South Carolina is at the foot of the list, with 1 patent to 23,492. To New York the largest number of patents have been issued in each of the three years under consideration—to wit, 4,288 in 1889, 4,585 in 1890, and 3,907 in 1891. England continues to hold first place among foreign nations in the procuring of American patents, and of her colonies Canada leads in inventiveness. It will be seen, on reference to the foregoing table, that the year 1891 falls slightly behind 1890 in the number of patents issued as well as in the principal totals. Such variations, however, characterize any given term of years, and have no especial significance.

The reports of the Commissioner of Patents during the three years under review have been of especial interest from the fact that the Hon. C. E. Mitchell, of Connecticut, became commissioner in March, 1889, and brought some new ideas to the management of the office. He found it necessary in each report to plead, as his predecessors had done, for increased room, for an increased number of assistants, and for better salaries in the case of those already employed. He was succeeded in office, Aug. 1, by W. E. Simonds.

The place of the Patent Office among the departments of the Government is in many respects unique. It alone of all the departments is self-supporting, and has now on the books of the treasury a very large sum to its credit. The

space at the disposal of the working force is totally inadequate. The rooms, omitting the store and reception rooms, number 48, and their combined capacity, deducting the space occupied by the necessary furniture, is 247,441 cubic feet. The number of occupants constantly employed during business hours is 270; the cubic feet of space per occupant is therefore 916 feet. The best authorities estimate the number of cubic feet reasonably required by each person at 4,000. The ingenuity of the officers is constantly taxed to its utmost to find storage room even for the copies of patents as they are printed from week to week. The actual cash income from the sale of these copies exceeds \$60,000 a year, yet they are stored in different parts of the building, on different floors, and so widely separated that the searcher for a particular patent may be obliged to go from one end of the building to another several times before he can determine the exact location of the file for which he is searching. During the past six years the patrons of the Patent Office—that is to say, the inventors and designers of the country at large—have paid into the Treasury over \$1,000,000 in excess of all expenditures, and the net income of each succeeding year has thus far invariably exceeded that of its predecessors. The present issue of the "Official Gazette" is 7,000 copies, of which 2,953 are furnished to subscribers at \$5 a year, and 3,576 are distributed to public libraries, members of Congress, and others who are entitled to them.

The halls of the model room now contain over 150,000 models, and the number added during

an average year is in excess of 500. The present practice of the office does not call for a model excepting when required by the commissioner, which, of course, reduces the amount of space requisite for keeping up the work of the department. There are, however, about 25,000 models already in the cases which require repairing. It is frequently necessary to refer to them in considering new applications for patents, and there is naturally a considerable amount of breakage and wear and tear. The models at present in hand are of almost inestimable benefit to inventors, by enabling the examiners to conduct their investigations with greater expedition than would otherwise be possible. The commissioner regards it as a public calamity that the office ever suspended the rule requiring models in all cases, and he considers its readoption as most desirable.

In connection with the commissioner's report for 1891 (published in the "Gazette" of Feb. 2, 1892) are several new appendixes of great historical interest, showing, with a completeness not before attempted, the relations of the Patent Office to the prosperity of the country.

An enormous majority of our great manufacturing interests were originally based upon inventions recorded in the Patent Office. The patent laws do not exist for the benefit of inventors so much as for the advantage of the public, and the sooner the representatives of the people can be made to understand this fact the sooner will the office be freed from the fetters that now limit its usefulness.

The Library.—In the Patent Office is a department known as the "Scientific Library," and during recent years much work has been done in arranging and indexing books and patents. The library contains about 60,000 volumes, and last year's expenditure for its support was \$2,670. Authority has been recently received from Congress to exchange the "Official Gazette" with other scientific publications, and this has practically resulted in an increase in the fund available for the purchase of books. In connection with the library work is a classified abridgment of the patents already issued, for the prosecution of which an appropriation of \$10,000 was made by Congress several years ago. No additional funds have been forthcoming, and that amount has already been expended.

Litigation.—1889. The Supreme Court of California, *Hill vs. Miller* in a case where an invention is specified as part of the capital stock of a partnership, held that a patent on the invention becomes partnership property.

Before the Supreme Court of Indiana it was held that the trade-mark "Akron Dental Rubber" was infringed by the legend "Non-secret dental vulcanite, made according to our analysis of the Akron Dental Rubber," the last three words being printed large and in red, while the rest of the inscription was small and black.

In the case of *Monroe vs. Bedell et al.* the Supreme Court of New York held that the adoption of the name "Old Sleuth" to describe a series of books did not give the plaintiff an exclusive right to the word "Sleuth" in the titles of books. The complaint was dismissed with costs.

The Supreme Court of Ohio, at Cincinnati, held that an article having a distinct commer-

cial value of its own can not be made a trade-mark by being attached to another article and sold with it. This case is known as "*Hoeb et al. vs. Bishop et al.*" The instance in point was a scarf or other ornamental pin attached to the cigar and claimed as a trade-mark; the pin could readily be detached and used for personal adornment.

1890, March. United States Supreme Court, *Evory vs. Burt*. Patent 59,375, Nov. 6, 1866. Held to be for the manufactured article, not for a mode of producing. A mere improvement in degree is not invention.

A case of considerable interest has been tried in the Eastern District of Massachusetts, the Western District of Wisconsin, and the Northern District of Illinois, Judge Blodgett presiding in the latter instance. The Consolidated Roller Mill Company, it appears, holds patents relating to rollers used in mills, and claims exclusive rights thereon. If sustained, the company can claim royalty from nearly all proprietors of roller mills in the United States. In the two last of the courts named above the decision is adverse to the claimants, in the first it was in their favor, and it is understood that it will now be appealed to the Supreme Court.

The United States Supreme Court held that a United States patent is not terminated by the forfeiture for any reason of the corresponding foreign patent, but that it continues until the legal term of the foreign patent ends. This decision relieves American inventors of a very embarrassing condition. Heretofore if a foreign patent has been granted for an invention and an American patent taken out for the same, the lease of life of the latter was limited by that of the foreign patent, which was likely to come to an end at any time through non-payment of dues, which are usually in foreign countries arranged on an installment plan.

An official decision holds that an inventor who conceives and describes an invention in such a manner that another can construct the thing described is entitled to a patent as against an inventor whose conception was of later date but who filed his application first; this provided the original inventor uses reasonable diligence in perfecting his invention.

October. United States Circuit Court, Eastern District of Pennsylvania, Justice Butler, *Wright vs. Postel*. An improvement in card-gilding machines declared invalid because, though the inventor proved priority of invention, he did not use due diligence to perfect and patent his invention.

September. The United States Circuit Court of Massachusetts, Judge Colt, the Pullman Car Company *vs. Boston and Albany Railroad*, held that the Sessions and Pullman patents, 1887 and 1889, covered all devices involving hood or vestibule between railway carriages. This decision caused much adverse comment, as vestibules or hoods practically similar to the Pullman device were in use about 1860 on the Housatonic Railroad in Connecticut. Nevertheless, this objection has not been set aside.

July. The United States Circuit Court, Syracuse, N. Y., Judge Wallace, *Tibbe & Sons vs. Heineken*, for infringement of patent on corn-cob pipe, held that filling the cob from the outside with a plastic self-hardening cement was a

new invention and defensible under patent law, notwithstanding the established and common practice of filling pipes of this kind with a similar cement from within.

April, 1891. United States Supreme Court, opinion delivered by Mr. Justice Gray, *Waterman vs. MacKenzie et al.* Definition of an assignment in patent law is a writing conveying either (1) the old patent covering all rights in the United States, or (2) an undivided share in that right, or (3) the exclusive right in some specific part of the United States. Such instrument vests in the assignee a title in so much of the title itself, with the right to sue infringers alone in first and third cases, and jointly with the assignor in second case. Any other transfer is mere license, conveying no title or right to sue for infringement. A grant by owner of patent of the right to manufacture and sell does not include the right to use the patent if manufactured by third persons, and is therefore a mere license. The record of a mortgage in the Patent Office perfects the title of mortgagee toward all other persons as well as against the mortgagor, and the mortgagee is the only person who can therefore sue for infringement.

One of the most notable cases tried was that of the Edison Electric Light Company vs. the United States Electric Light Company (the Westinghouse Company). The opinion was delivered by Judge Wallace. The hearing lasted eight days. The patent in question was No. 223,898, for an incandescent electric lamp. As printed, the testimony fills nearly 6,000 pages. It took the lawyers nearly two years to prepare the case, and the opposing briefs together filled about 1,000 pages. Judge Wallace's opinion made another respectable volume, containing about 10,000 words. It sustains the patent as issued, and orders the decree of injunction against the defendants. The invention was made in 1879, patented in 1880, infringement discovered and suit begun in 1885. The two claims in litigation were—(1) a carbon filament secured to metal wires, as set forth; (2) the combination of carbon filaments with a glass receiver from which the air is exhausted, as set forth. The decision set aside the first claim as not infringed upon, but sustained the second claim as a "highly meritorious discovery and invention, whereby a lamp was made which was practically operative and successful, the embryo of the best lamps now in commercial use, and but for which the subdivision of the electric current by incandescence would still be nothing but the *ignis fatuus* which it was pronounced to be in 1879 by some of the learned experts who are now striving to belittle his (Edison's) achievement and show that it did not rise to the dignity of an invention."

Great Britain.—In January, 1890, the English Court of Queen's Bench, Mr. Justice Day presiding, tried a case that will no doubt be cited as an important precedent. In one of the lower courts, from which the case was appealed, the jury found, upon two issues, substantially that the trade-mark as used by the defendant was in effect an imitation of the plaintiff's trade-mark, and that the defendant had wrongfully or voluntarily disposed of goods that were not really the goods represented by the trade-mark. From that judgment the defendant appealed,

holding that the plaintiff's trade-mark had been improperly registered. The case was complicated by the fact that the deeds were drawn in Spanish and executed in Mexico, so that, while there was no question as to their regularity, much difficulty was experienced in reaching an intelligent conclusion. It was held eventually, however, that the deeds conveyed no good-will, but only an independent right to the use of the trade-mark in question. It followed, therefore, that the registration was irregular and void, and the plaintiff not entitled to maintain an action on which he had recovered judgment. Judgment was accordingly reversed and entered for the defendant, but without costs. In effect, the rule has been laid down that a trade-mark may not go beyond the trade to which it belongs. That this is essential in the interest of the owner of the trade-mark is perfectly obvious, since it is very important that the public should recognize the mark as designating certain special goods, and because it is to the interest of the purchaser to be able, by means of the mark, certainly to identify the article he is purchasing. If the owner of a trade-mark were free to sell his mark, while retaining his trade, it is evident that the public would run the risk of being deceived in regard to the goods covered by a well-known mark.

Germany.—In October, 1891, in Germany, an amendment to the law of 1877 went into effect. The principal change that is of interest to Americans is that patents taken out in foreign countries act in anticipation of the invention only after a lapse of three months, thus permitting extended time for application in Germany. If an invention is still in preparation, the real inventor may prevent the issue of the patent. Fees may be paid for the whole time in advance. Fees will be returned if the patent is annulled. Application for annulment can not be made after five years. Fees are not lowered, but may be by the Federal council without special legislation. A patent may be revoked if due diligence is not used to introduce it. Damages for infringement are increased. The new patent office was established in Berlin in April.

Mexico.—A new patent law was passed in Mexico in 1890. Under its provisions any person, native or foreign, may obtain a patent for twenty years, with the privilege of extending it for five years. The office fees are from \$50 to \$150. No official guarantee is given regarding novelty or sufficiency of specifications. Patents are given for articles already patented in foreign countries, but the Mexican patent expires with the expiration of the foreign patent. Supplementary applications for improvements may be filed within one year. The Government may appropriate any patent on payment of a fair indemnity. When application is filed, the patent is published for two months in the "Official Gazette," to allow for interference proceedings, if there is reason for any such. All previous patent laws are repealed.

Swindling Agents.—An easy and profitable method of swindling on the part of unprincipled agents has of late assumed considerable proportions. In the Patent-office "Gazette," published weekly by the department, are hundreds of names of inventors and illustrated accounts of

their inventions. As the addresses of the inventors are given in every case, it is easy for an agent to write, offering to sell or even to purchase an invention. The usual course is to offer to negotiate a sale for some small consideration paid in advance; this payment may be trivial and may be asked for on the ground of necessary expenditure in the matter of postage or of advertisements. The army of inventors is so numerous that small contributions from a large percentage of them may easily afford a considerable income for an adroit swindler. This practice is not confined to the United States, but has been taken up by foreign agents, who find too many victims among Americans.

Patent-office Decisions.—March, 1889, in the case of Donovan, on appeal, Mr. Benson J. Hall, assistant Commissioner of Patents, explained rules 68 and 139 as meaning that each tribunal of the Patent Office is bound to see to it that an inventor shall secure a patent for whatever is patentable in his invention; this is alike the duty of the examiner-in-chief, of the primary examiner, and of the commissioner. Congress has decided that whenever the essential point has been missed in the issue of papers the inventor may claim a reissue on demonstration of the oversight.

January, 1890, a patentee may not say in his claim that certain specific elements of his combination are not essential to the combination or invention.

The Centennial Celebration.—Until the date was nearly at hand it did not, apparently, occur to any one that the hundredth year of the United States patent system ought to be celebrated as an anniversary occasion. It was then too late to organize for a suitable ceremony; therefore it was determined to celebrate instead the beginning of the second century of American patents. The 8th, 9th, and 10th of April were designated early in 1891, and the exercises were held in Lincoln Music Hall, Washington. President Harrison opened the proceedings with a brief address, after which the Rev. Dr. Sunderland asked the divine blessing on the assembly. The regular proceedings were appropriately opened with an address by the Hon. C. E. Mitchell, Commissioner of Patents, on "The Development of the American Patent System." The following named speakers addressed the meetings: The Hon. Carroll D. Wright, Commissioner of Labor, on "The Relation of Invention to Labor"; Justice Blatchford, of the Supreme Court, on "A Century of Patent Law"; the Hon. Robert S. Taylor, on "The Epoch-making Inventions of Americans"; Senator Platt, chairman of the Patent Committee, on "The Invention and Advancement of Science"; Senator John W. Daniel, on "The New South as an Outgrowth of Invention and the American Patent Law"; Ainsworth R. Spofford, the librarian of Congress, on "The Copyright System of the United States." Prof. Thomas Gray, on "The Invention of the Telegraph and Telephone"; Col. F. A. Seely, principal examiner of the Patent Office, on "The International Production of Industrial Property." Prof. Samuel P. Langley, of the Smithsonian Institution, presided at one day's session, and spoke briefly on "The Progress of Invention." Prof. William B.

Trowbridge, of Columbia College, read a paper on "The Effect of Technical Schools on the Progress of Invention." Prof. Robert H. Thurston, instructor in mechanical engineering in Cornell University, read a paper on "The Invention of the Steam Engine." A paper prepared by Major C. E. Dutton, U. S. A., was read in his absence by Capt. Birney, of the Ordnance Bureau, entitled "The Influence of Invention upon the Implements and Munitions of Modern Warfare." "The Relation of Abstract Scientific Research to Practical Invention," with special reference to chemistry and physics, was treated by Prof. F. W. Clark, of Ohio, chief chemist of the United States Geological Survey. The concluding papers, read on the evening of April 10, Prof. Alexander Graham Bell presiding, were as follows: "The Relation of Invention to the Communication of Intelligence and the Diffusion of Knowledge by Newspaper and Book," by William T. Harris, United States Commissioner of Education. "The Birth of Invention" was considered by Prof. Otis T. Mason, of Virginia, curator of the National Museum, and Dr. John S. Billings, curator of the Army and Medical Museum, concluded with a paper on "The American Inventions and Discoveries in Medicine, Surgery, and Practical Sanitation." In connection with the proceedings at the Music Hall special effort was made to collect in accessible places some of the more notable of the models and machines that have exerted distinguished influence on our commercial progress—the press, for instance, at which Benjamin Franklin worked, a model of the plover used by Prof. Morse in laying the first telegraph line, part of one of the first locomotives built in the United States, and many other interesting relics. Several meetings were held with a view to a permanent organization among inventors and manufacturers of patented articles, the design being to secure co-operation in matters looking to the improvement of the patent system, or, to use the words of the prospectus, "that organized effort may be made to remedy existing defects and provide against danger in the future." The organization took shape in the election of Dr. Gattling, inventor of the Gattling gun, as president, and Gardner R. Hubbard, of Washington, Prof. William A. Antony, of the Electrical Engineers, Thomas Shaw, of Philadelphia, and Benjamin Butterworth, of Ohio, as vice-presidents.

Inventions in 1890-'91.—During these two years 46,454 patents and registrations have been issued in the United States. Only a very small portion of them can be here enumerated. In the following list, it is intended mainly to include only the more homely and convenient devices that are adapted to the uses of every-day life. Some of these inventions are quite unknown to the general public, and few of them have attained more than a local reputation.

Boats.—An ingenious folding boat has been placed in the market by its inventor, Charles W. King, of Kalamazoo, Mich. The objection to almost all folding boats is that the spaces between the ribs and the longitudinal pieces are so wide that when placed in the water and loaded the external pressure is such as to destroy the lines or model of the boat. In Mr. King's invention (Fig. 1) he has employed galvanized

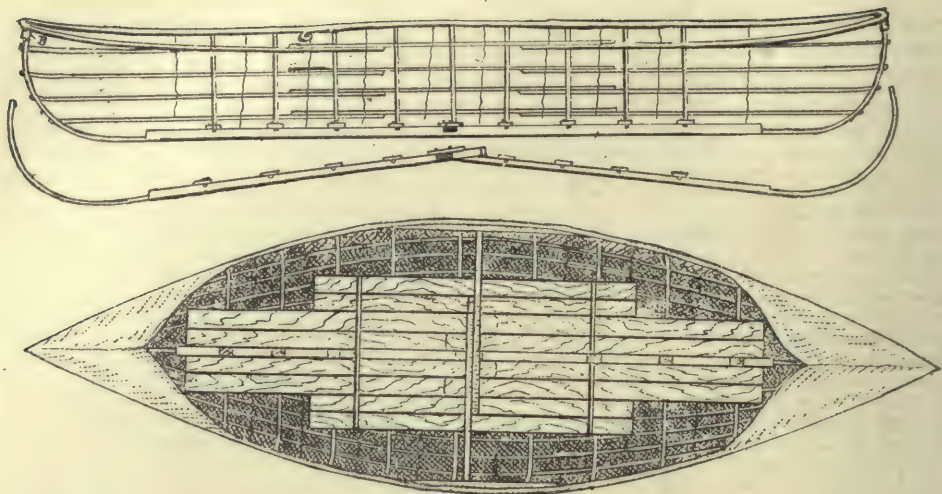


FIG. 1.—KING'S FOLDING BOAT.

steel wire for the necessary "timbers"; the formation of the boat, as shown in the illustration, consisting of four sections of such wire lashed together, overlapping one another in such fashion as to cover almost the whole interior surface of the boat. The necessary longitudinal stiffness of the boat is secured by a stout, oaken keel, hinged amidships and furnished with stem and stern pieces that fit into the curved ends of the flexible, waterproof covering. The curved stem and stern pieces are set in place while the keel is still bent upward in the middle at its pivotal point. It is obvious that the downward pressure on the middle of the keel thrusts its ends

they are permanently held. These ribs also hold down the smaller wire frame-work already in place, pressing it so firmly against the flexible covering that it can not be moved unless the keel is detached. Along the midship section of both gunwales two removable strips of wood are placed, and these are pressed outward by an adjustable cross piece, which can be lengthened or shortened at will, thus increasing or decreasing the beam of the boat according to convenience or necessity. Immediately on the steel ribs before mentioned are laid light floor boards, running fore and aft in sections, so that the occupants of the boat sit or stand without danger of stepping

upon the flexible covering. These, too, are securely locked in position by simple devices. With each boat is a light canvas cover, in which all the parts can be packed, and finally the whole is wrapped up in an external case formed by the floor boards. The total weight of such a boat, of medium size, capable of carrying three men in smooth water, and about 12½ feet long, is 64 pounds.

Propeller for Small Boats.—The ingenuity of inventors has for a long time been directed to devising some kind of mechanical appliance that should supersede the oars and paddles. Ordinary paddle wheels and screw

propellers, when applied to small boats and driven by arm or leg power, are not nearly so efficient in proportion as when driven by the tireless steam engine. A recent device for this purpose is known as the "feather-blade elliptic propeller" (Fig. 2). It is a mechanical device for operating a paddle that closely approximates

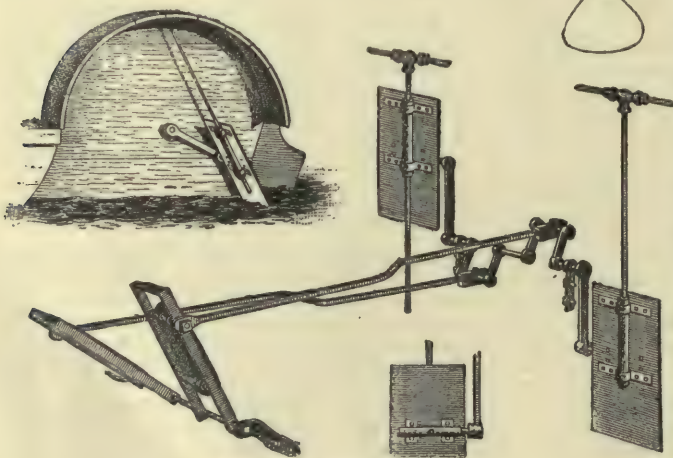


FIG. 2.—ELLIPTIC PROPELLER.

outward, so that the entire flexible covering is strained longitudinally as tight as possible. The keel being once in position, ribs made of somewhat heavier steel wire and numbered to indicate their proper position in the boat, are slipped into sockets along the gunwale, and then pushed along the keel until they engage notches, where

the movement of a single-bladed paddle when used by hand. Reference to the illustration will render the principle apparent. The longest movement of the paddle is when immersed, the blade being nearly vertical in the water, so that there is no splash or slip or loss of propulsive effect. It has the advantage over oars in that the boatman faces the bow. The propulsive machinery consists of a simple arrangement of pedals and cranks. The steering gear is operated by hand, tiller lines leading to an ordinary rudder attached to the stern-post. It is claimed by the inventor, George V. Tibbels, that there is a gain of 25 per cent. over any other means of water propulsion for small boats. The machinery can be made of wood or metal, is preferably operated by hand or foot, but any of the petroleum, steam, or naphtha engines can be adapted to it.



FIG. 3.—CAN-OPENER.

Can-Opener.—Among the scores of devices for opening tin cans, the invention of Hasbrouck Alliger, of Rondout, N. Y., seems to combine almost all the excellences of such devices. It is made in two parts, as shown in the illustration. The longer or central piece is provided with a bent point, which can easily be forced by the hand through the top of the can; then, bending it downward till it rests horizontally against the

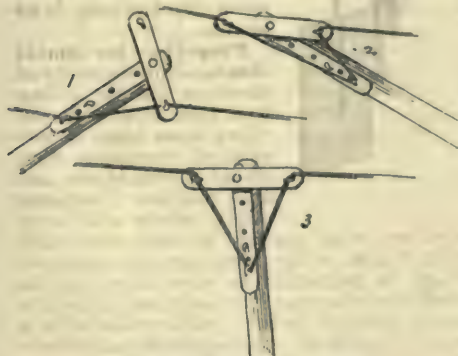


FIG. 4.—CLOTHES-LINE PROP.

top of the can, the smaller part bearing the knife blade is forced through the edge of the tin; both parts are then doubled together, the blade assuming an efficient cutting angle, and it is a very easy matter to pass the blade around the entire can, separating the top neatly from the sides.

Clothes-Line Prop.—Any one who has witnessed the trouble encountered by a laundress in placing the ordinary poles used for the support of clothes lines will appreciate the tightening and retaining device shown herewith (Fig. 4). The top of the pole is provided with a cross piece and furnished with hooks curved inward on the cross piece and downward on the main pole. In the illustration, 1 shows the method of engaging the clothes line, 2 shows the second motion in tightening the line, and 3 shows the pole when set upright, the line engaging all three of the hooks.

An Elastic Chain.—Many devices, such as springs and buffers of India-rubber, have been invented to overcome the longitudinal rigidity of an ordinary chain, but a device that makes the chain itself elastic possesses obvious advantages. Fig. 5 shows an invention patented by Charles Redwood, of Denison City, Texas. It is made with flexible wire loops, each piece of bent wire having an eye at each end. These eyes are made of such shape and size that the eye of another similar piece of wire can be passed through, and thus a chain of any length can be constructed. The middle portion of each piece of wire is bent at a somewhat curved angle, so that when a strain is brought upon the chain the eyes of each link slip together toward the angle, and if the strain is continued and increased the curved pieces of wire act as springs and recover their normal position as soon as released. No. 1 shows the chain at rest; No. 2, subjected to a strain.

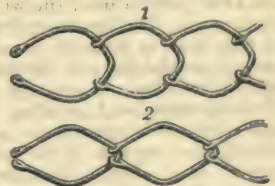


FIG. 5.—ELASTIC CHAIN.

A New Foot-bath.—For the feeble or infirm, any device that renders easier the needful but difficult operation of thoroughly cleaning the feet is to be welcomed. The invention of Mrs. M. L. W. Martinot, of New York city, seems to approach perfection for this purpose. The illustration (Fig. 6) shows the principle. A strong, flexible, water-tight stocking is made large enough to permit perfectly easy putting on and taking off. The inner surface is studded with soft, elastic rubber protuberances, which press against the skin with every movement of the foot and ankle. A comparatively small quantity of water or other me-



FIG. 6.—FOOT-BATH.

dium, warmed and prepared to suit the case, is poured into the stockings, which are then put on and properly secured about the legs. The wearer may then effect a very thorough foot-bath by walking about the room, or otherwise producing the required friction. For travelers or others whose supply of hot water is apt to be limited, this device would seem to be very convenient.

A Bath Lift.—Few of the ordinary operations of hospital practice are more difficult than that of placing a helpless patient in a bath-tub, an operation very often desirable for the sake of

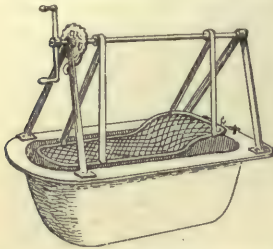


FIG. 7.—BATH-LIFT.

prolonged immersion. Fig. 7 shows a lift invented by S. A. K. Strahan, M. D., of England. It is a light but strong metallic frame fitted with ordinary twine netting upon which the patient can stretch himself, or can be laid with comparative

ease, and then, by means of the crank, be lowered into the bath. One attendant can thus bathe a patient who can with difficulty be handled by four under ordinary conditions. When the bath is over, the patient is easily hoisted out of the water, rubbed dry, and prepared for bed. Such an appliance could readily be fitted to a bath-tub in a private house.

Operating-table for Veterinary Surgery.—One of the problems that confront the veterinary surgeon is the difficulty of retaining his subject in an accessible position during an operation. The ordinary method of tricing up a horse or an ox by means of wide abdominal support is open to objections, since the animal, when becoming frightened, can struggle and render it almost impossible to secure him properly. Dr. L. A. Anderson, of Cincinnati, has in use a table and appliances at his hospital on which a heavy animal of any kind can be secured and treated without difficulty or danger. The animal is led alongside an object which he might easily mistake for a fence or the side of a barn; here he is harnessed, in a somewhat novel method to be sure, but in a way not calculated to arouse his suspicions. Several strong, broad bands are passed around the body, and a similar one loosely about the neck, the animal still standing in a natural and unrestrained position. This done, the operator goes to the other side of the table and operates a crank, gently tilting the supposed fence or barn door first to a slight angle and finally to a horizontal position; and the animal may struggle as he will until he finds that such efforts are futile; usually the patient subsides as soon as he finds himself approaching a horizontal position.

Rein Grip.—Fig. 8 shows a simple device that will be of interest to every one who has much driving to do. There are already in use many devices to facilitate the firm grip upon the reins, but most of these require some complicated operation before they can be moved back and forward according to the necessities of the case. Elvin L. Smith, of Mansfield, Mass.,

is the inventor. It consists of two similarly shaped cam blocks of a curved or horn-like shape, held together and pivoted upon two simple curved plates, between which the rein passes. The plates are spaced apart by parallel rods, which serve as pivots upon which the cam blocks are hinged. Each rod is surrounded by a spiral spring, one end of each spring being fast to the flange of the bracket plate, and the other end fixed in the cam block. The two springs operate in such a way that their strength is exerted to extend the blocks oppositely, causing the bases of the cams to press on both sides of the rein passing between them. When it is in use the fingers naturally press upon the lateral wings, forcing the butts of the cams together firmly upon the rein, but, by a very slight press-

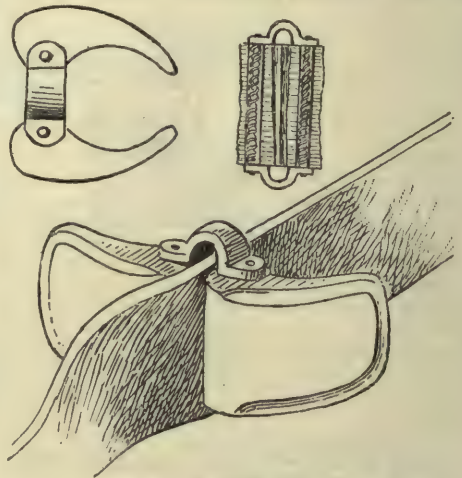


FIG. 8.—REIN GRIP.

ure exerted without changing the hand, the free ends of the blocks may be folded into the position shown above, when the rein is released from the grip and the whole appliance may be moved freely forward or back. The grip may be made to embrace two lines as well as one.

Luminous Keyhole Escutcheon.—It is surprising that the use of luminous paint for many purposes has not become more general. One of the most common instances where it can be made useful is perhaps on the doors of closets, chests, etc., kept in dark places. John E. Fitch, of Albuquerque, N. M., appears for some reason to have been the first to perceive the advantage of a luminous keyhole escutcheon. The merits of such an invention are so clear that it need not be here illustrated. The device has a concave or recessed back, coated with phosphorescent paint and covered with glass; surrounding the phosphorescent paint is a frame completing the escutcheon and making it ornamental. It is well-known that phosphorescent paint when kept for a long time without an opportunity to renew its luminosity by exposure to the sun loses its normal power of emitting light in the dark. Good paint shows readily in the dark for two or three years, and its renewal at the end of that time is by no means difficult.

Railway Appliances.—One of the great difficulties encountered by railroad men in grazing countries where fences are scarce and cattle abundant arises from the propensity of animals to stray out of the highways or out of their proper pastures and wander along the railroad track. Every one who has traveled much on such lines has witnessed the stolidity with which a herd of cows, or a single animal even, will watch the approach of a shrieking locomotive and stand placidly in front of it, chewing her cud or resolutely refusing to get out of the way. W. J. Burk, of Seattle, Wash., has devised a steam jet connected with the engine, so arranged that by very simple mechanism an engineer can send a stream of hot water to a considerable distance in front of the cow-catcher of his locomotive; such a discharge would, of course, effectively frighten any number of cattle without seriously injuring them.

Another device is intended to render it impossible for cattle to pass any barrier, such as a fence or a ditch, by following the track. The ordinary plans, unless elaborate and expensive, have proved ineffectual, the stupid cattle ex-

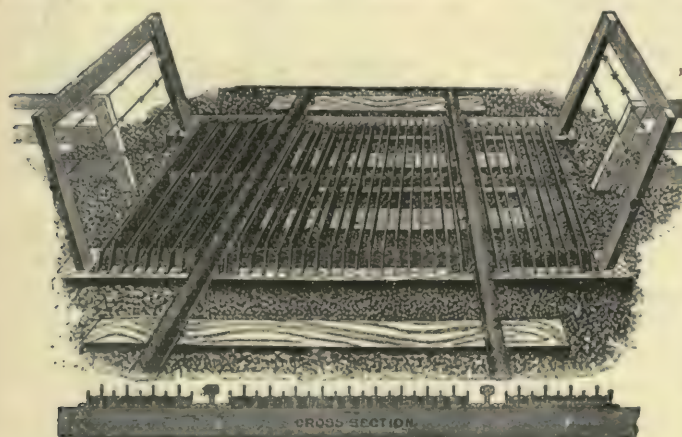


FIG. 9.—CATTLE GUARD.

hibiting a highly creditable degree of ingenuity in overcoming barriers that would seem to be effectual. In this device (Fig. 9) a series of bars of thin iron or steel are placed upon their edges parallel with the rails; they are notched into cross pieces so as to prevent displacement, and in order to avoid possible injury they are spaced so closely that no animal can get its feet caught between them; moreover, they are made of unequal height, so that a secure footing is impossible for any hoofed animal. It is claimed that no animal can be induced or forced to trust itself to the treacherous support offered by this guard, one great advantage of which is that it requires no costly excavation beneath the sleepers.

Attachment for a Pail.—Every one must have noticed the difficulty that the housemaid experiences in carrying her scrubbing-brush, pail, and soap from one place to another. William P. A. Scott, of Pennsylvania, has patented a simple attachment that can be placed upon the edge of an ordinary pail and used as a recep-

tle for soap, scrubbing-brush, cloth, etc. The device is a circular shelf, with slotted projections fitting over the edge of the pail, and extending downward sufficiently to insure a secure hold.

Curtain Rings.—The very general introduction of curtains and *portieres* in household

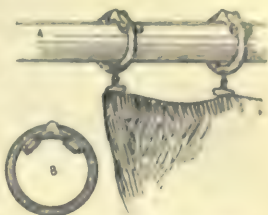


FIG. 10.—CURTAIN RINGS.

decoration has suggested to N. B. Allen, of New York, the application of a device for curtains that has long been in use among seamen, namely, rings to which small rollers are fitted, so that in moving the curtain the rings will not bind in passing along the rod. This device is shown in Fig. 10. Similar devices, already referred to as in use among the seamen, are called "pearls." A shows the rings in use, fitted with the attachment, and B the ring separate from curtain and rod. The attachment is of thin sheet metal, fitted to the shape of the inner surface of the ring, to which it can readily be attached by slightly springing the metal. In place of the ordinary pearls are fitted small antifriction rollers, the bearing surfaces of which rest upon the face of the rod upon which the curtain hangs.

Cooking Utensil.

Many devices are in use to facilitate the heating of water and the like over ordinary gas fixtures. An improvement in this direction has been patented by Whitfield Ward, of New York. A circular opening is cut in the bottom of an ordinary stew-pan, and to this is soldered a conical

hood, rising within the pan. Within this hood is a perforated cylinder, which is held in position by a perforated ring flush with the bottom of the stew-pan. The illustration (Fig. 11) shows the utensil in section. When it is placed upon the gas fixture the burner rests within the perforated hood, and the utensil is thus held securely. The gas being turned on and lighted, burns only when it comes in contact with the air below the perforated hood.



FIG. 11.

Yeast Cake.—Joshua Barnes, of New York, has secured a patent for what is termed a "sugar-coated yeast cake." The term must be regarded as technical, since the coating is not distinctively composed of sugar, but of some impermeable gum. The invention is valuable in that it preserves for an indefinite period the domestic or dry yeast cake, which ordinarily can be kept in a serviceable condition only a few weeks at most, and only a few days where the conditions are

unfavorable. The sugar coating or gumming process, it is claimed, is a safeguard against the effects of the atmosphere and of insects.

Spoon-holder.—One of the most common mishaps of the sick-room is to mislay the spoon

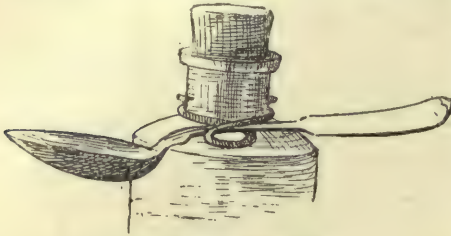


FIG. 12.—SPOON-HOLDER.

that belongs with a particular bottle. A recently patented contrivance is made of wire, easily adjustable about the neck of any bottle. It has at one end a double curve so adjusted as that it will hold a spoon securely in the most convenient position for use. This is shown in Fig. 12.

Automatic Screw-driver.—This device is intended to facilitate the driving of screws and similar operations in carpentry. In external appearance it is like an ordinary screw-driver, but within the handle is a spiral shafting arranged on the principle of what is known to mechanics as longitudinal reciprocation. The screw is started as usual, the point being sunk in the wood. To drive it home, it is only necessary to bear heavily and vigorously in the direction of its length. The screw is immediately revolved with great velocity and driven rapidly home.



FIG. 13.—SCREW-DRIVER.

This device is patented by Christopher S. Olsen, of Illinois (see Fig. 13).

Book-protector.—The spacing of shelves in a library, out of consideration for the wear and tear of books, should be such that the books can be removed without sliding them upon the lower shelf, but this involves a large space between the tops of the books and the upper shelf, which is unsightly, and is not desired by most librarians. Lawrence C. Leith, of Texas, has patented a carriage

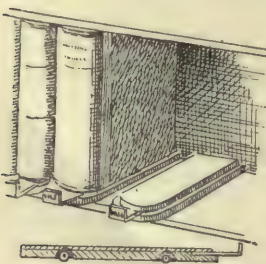


FIG. 14.—BOOK-PROTECTOR.

made of a size corresponding with the book it is designed to hold (see Fig. 14). It has a raised central portion to support the lower edges of the leaves, and the corresponding edges of the covers rest on the outer portion of the carriage. Inserted in the under side of the carriage are

transverse rollers. The platform is run in or out on the shelf, there being a pull on the front

edge of the carriage on which the name or number of the book may be marked for greater ease of reference. This device is of course mainly useful in the case of large and heavy books, whose lower cover edges rapidly become worn out where they are frequently used.

Indexes.—Every book should have an index, and almost all modern books have indexes; but there are many works in constant use that lack these important accessories. Among recent patents is an attachment to an ordinary book cover, so arranged that it holds leaves for indexing, but forms a part of the cover, folding within at the end of the volume. If this device could be attached to all the books that need the addition of an index, work in reference libraries would be greatly facilitated.

Book-holder.—A simple device for keeping open the pages of an unruly or ill-bound book

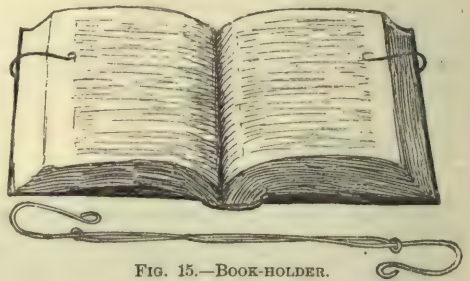


FIG. 15.—BOOK-HOLDER.

has been patented by William H. Ash, of New York. The contrivance is clearly shown in Fig. 15. It is made of wire, and composed of two similar parts having a sliding connection with each other, each of the said parts being bent into a hook at the outer end and large enough to fit over the edges of an ordinary book. The other or inner end is bent at a sharp angle, so that it engages the part of the other hook with which it is in contact.

Calf-feeder.—One of the most tedious and exasperating experiences of a stock breeder is to teach a young calf to drink from a pail or trough. William E. Spinners, of Iowa, has patented a device intended to help the farmer in solving this problem. It consists of a flexible tube several inches in length, which is attached to a perforated plate, which in turn may be screwed to the bottom of a pail. The perforated plate freely admits milk to the interior of the tube, and the calf, in endeavoring to drink, gets hold of the upper end of the tube, and thus learns to help himself without the usual tedious devices to which farmers resort (see Fig. 16).

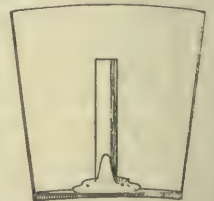


FIG. 16.

Rope-clamp.—Various devices are in use for the adjustment of tent ropes, clothes lines, tennis nets, and other fixtures, where it is necessary to lengthen or shorten a rope at will. The ordinary wooden fiddle in use for this purpose has its disadvantages. S. W. Conklin, of New York,

has devised an improved clamp, which apparently is very convenient. The frame or case is made of malleable cast iron, at one end of which is a

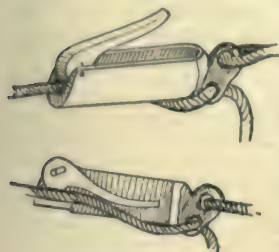


FIG. 17.

clamping lever of the usual type, formed with an eccentric notched upon its lower surface to engage the rope. This lever has an inclined slot for its pivotal pin, so that it seizes the rope, forces the lever forward, and causes it to bear outwardly upon

the rope, thus increasing its holding force. At the opposite end of the frame are two rigid rings, through which the rope passes, and can be attached wherever required (see Fig. 17).
Ensilage.—Processes for the preparation of ensilage are numerous, and are probably more familiar to agriculturists in European countries than in America. But the building of silos, either below ground or above, is not uncommon in this country. Cuthbert G. Johnson, an Englishman, has patented in this country a process for the preparation of ensilage, which is claimed to be highly efficient, though, so far as known, it has not been tested in this climate. The device consists in placing the material in a stack above

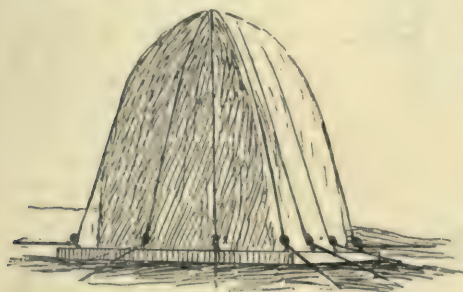


FIG. 18.

ground. Near the circumference at the foot of the stack, and attached to the solid platform, are fixed blocks on pulleys. Through these, and over the top of the stack, ropes are passed, and the ordinary appliances of mechanics can be used to produce any desired amount of compression upon the stack. Fig. 18 shows a section of the stack, with the pulleys in position. The free ends of the rope pass to cleats or to other blocks, which, with the ordinary combinations, may be used to increase the pressure. The idea of the invention seems to be to avoid the expense of digging deep pits, usually employed, or the expensive structures that are sometimes erected above ground.

Storm Apron.—Any one who has ridden far in a carriage during a driving storm will appreciate the device recently patented by Dr. P. J. Gibbons and David B. Shelley, of Pennsylvania (Fig. 19). The ordinary carriage boot, it will be remembered, is rolled up and stowed on the inner side

of the dash-board. The present device is an apron of rubber, oil-cloth, or other waterproof material, so cut as to fit over and outside the dash-board. It has side flaps, which completely protect the floor of the carriage or buggy, with elastic strips to hold them in position, held fast to the side of the seat, and leather straps to raise it, so as to protect the person of the driver. The old-fashioned boot allowed the water to drain down, and almost inevitably to find its way into the bottom of the vehicle; the present device causes it all to flow outside and fall to the earth.

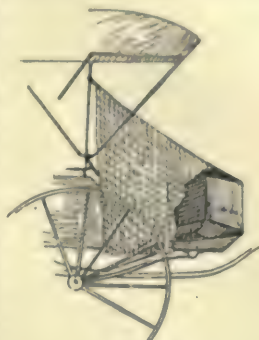


FIG. 19.

Swinging Ships' Berths.—The wretchedness that results from sea-sickness and the increasing number of ocean travelers have set inventors to work to alleviate their discomfort. Several inventions of the kind were shown at the recent Marine Exhibition in Boston. These differed from one another simply in detail. Some of the favorite ocean liners, as the "City of Berlin," "Chicago," "Chester," and "City of Richmond," and some of the ships of the North German Lloyd Company have used these devices with satisfactory results. The berths can be placed in an ordinary state-room; some of them scarcely occupy more space than is taken by the fixed berth. Great ingenuity has been exercised in securing sufficient swing by reciprocating motion, so that the actual space of the state-room will not be largely diminished. Some of the berths will respond readily to a roll of over 50°, while in point of fact a vessel in the roughest sea rarely rolls more than 40° or 45°. So nice are the adjustments in the 24-inch berth that it requires, it is said, only 26½ inches for its full operation. This is highly important when it is remembered that saloon cabins do not average more than 6 feet 2 inches in length, and 27 to 29 inches behind the doors. One of the berths is in appearance almost like a piece of movable household furniture, and scarcely more bulky than a sideboard or an upright piano. Most of these berths are hung so as to swing on pivots at the head and foot; but others are suspended from above by a central point of support, so that the pitch, as well as the roll of the vessel, is sensibly modified. Great ingenuity has been displayed in the adaptation of spare corners and nooks of the berths to hold toilet articles, books, and the other little necessities of which every traveler has a troublesome store. In the case of the free-swinging berths, rubber packing and springs are necessary to take part of the strain, and practical tests have shown that a glass of water, nearly full, can safely be left for hours in a berth, even when a vessel is passing through a tempestuous sea. Most of these inventions have been tested, and may now be said to have passed the experimental stage.

Line Guide for Fishing Rods.—The little metal rings that are commonly used on fishing rods to guide the line from the reel to the tip are ordinarily of somewhat elaborate construction and corresponding expense. Joel C. Parker, of Michigan, has invented and patented a very



FIG. 20.

simple appliance of this kind, consisting of two or more spiral coils of wire, the uncoiled ends of the wire projecting so as to be readily lashed to the rod. When in position the axis of the coils is parallel with the rod, and the line runs freely through it in the usual way (see Fig. 20).

Drag Anchor.—Emil J. Pagan, of France, has patented what would seem to be a highly efficient drag anchor, designed to take the place of the make-shift devices usually employed by mariners to keep the head of the vessel to the sea in a heavy gale. The invention, as shown in Fig. 21, consists of a series of umbrella parachutes, attached to the cable, and weighted at suitable intervals with sinkers to keep them below the surface of the water. As seen at the left of the illustration, the anchor is in the act of being hauled back on board the vessel. The tripping-line is allowed to hang slack when the anchor is in use, but as soon as it is hauled

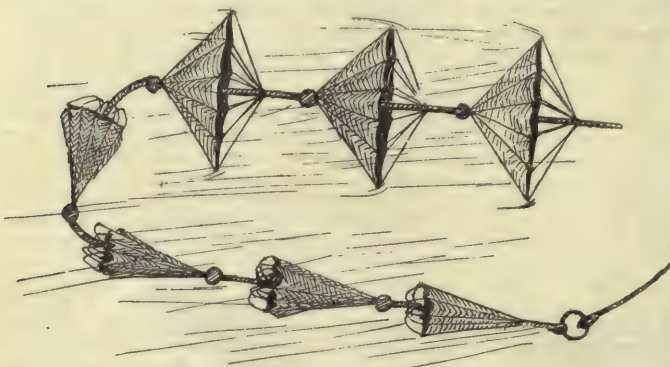


FIG. 21.

inboard the pressure is brought upon the reverse side of the umbrella parachutes, and they automatically close in passing through the water. An anchor of this kind can be stowed in very small space when not in use, and is always ready to be thrown overboard, and will act instantly and efficiently. In the case of most of the drag anchors in use, delay is almost always necessary in locking and adjusting the supports required to keep them in position.

Photographic Camera.—Among the most interesting of the photographic appliances of the year is the camera patented by Carl C. Stirn, of New York. It may be described as a panoramic camera, intended to produce such pictures as are used for the outlines of the cycloramas that have been exhibited in the principal cities of the United States. In order to secure an accurate panoramic photograph, it is necessary to revolve the camera on a pivot coincident with the cen-

ter of the lens, not with that of the camera itself, and upon this principle rests one of the most important claims of this patent. In connection with this, however, are film rollers, by which the ordinary sensitized film is kept taut, and the surface to be exposed is constantly maintained exactly at the required focal distance; moreover, the distance of the revolution is regulated by means of ingenious machinery, so that when one picture has been taken the film is shifted, and the edge of the next exposure coincides exactly with the edge of the preceding exposure. By this means a perfect photographic circle may be made of the entire horizon, and all the perspective values and the different conditions of light and shade may be secured with great rapidity and exactness.

Geographical Device.—Dr. Edward Eggleston, of New York, has patented, and shows in practical use in connection with a "First Book in American History," a device that is well calculated to impress geographical divisions on the mind of a child. In brief, the invention consists of the combination in book form of a series of maps, each printed upon one side of a leaf of the book, and each representing a separate portion of a given country. The leaves bearing the maps are successive; for instance, the first recognized boundaries of the United

States may be shown upon the first leaf; the blank space of this leaf is cut away with a pair of scissors. When the printed part which remains is folded down on the succeeding page, it exactly fits upon the next territorial acquisition of the United States; and thus, by cutting away the blank portion of the successive leaves, the whole present territory of the United States is built up in its regular order, and at length the complete map is seen at a glance as the country exists at present. Apparently, this device will effectually impress

upon the youthful mind any geographical changes that may take place.

Lovibond's Tintometer.—This device is intended to reduce to a certain definite and fixed standard the various color tests in use among dyers, print manufacturers, metallurgists, brewers, oil refiners, and, in short, all the trades that depend upon color for any stage or process of manufacture. Hitherto varying conditions of light and, to a very great extent, the "personal equation" have rendered such tests more or less untrustworthy. The tintometer, the invention of Mr. Joseph W. Lovibond, of Salisbury, England, may be briefly described as consisting in effect of two tubes placed side by side, provided with an eye-piece at one end, and open at the other end. Slight changes in the mechanical arrangement provide for the examination of opaque, transparent, solid, or liquid bodies (see Fig. 22). At the left, marked *D*, is a re-

flector, adjustable so as to show an even white surface in the direction of the tintometer at the right. This last is divided longitudinally, so that an observer at *E* will see through the tubes two equal white spaces on *D*. Supposing a liquid to be under examination, it is placed in a gauged vessel fitting a compartment in the left-



FIG. 22.

hand tube. Then slips of tinted glass are placed in the right-hand tube until the color of the liquid is exactly matched. In the case of solids or textile fabrics, the process is the same except that the object is so placed that reflected light instead of transmitted light reaches the eye of the observer at *E*. Here, then, is a system by which colors can be absolutely compared under constant conditions that render possible the adoption of a standard unit of color in scores of industries now more or less uncertain. The inventor has devised a very simple scheme of estimating color by a standard scale, each outfit including a large number of tinted-glass slips properly marked to correspond with a registered scale. Thus if a fluid in a one-inch vessel matches a glass slip marked 520, it contains 8 degrees of series number 500. The system includes the use of several slips in case of need, and the combinations of yellow and blue, making green, or of red and blue, making purple, are readily gauged and registered. The tintometer is not very generally known in this country, but is apparently entitled to the consideration of many different branches of very large manufacturing interests.

Flexible Metallic Tubes.—Many attempts have been made in the direction of flexible tubes, and with more or less success. But the most promising device as yet produced is of English origin. The plan of construction is seen in Fig. 23. A thin strip of copper, brass,

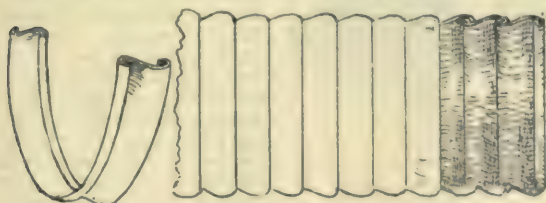


FIG. 23.

or gun metal is bent so that its section resembles the letter *S*. This is coiled upon itself so that the parts interlock continuously, forming a tube with overlapping and interlocking joints, which have of necessity considerable play upon one

another. The re-entrant curves of the section vary with the amount of flexibility required, tight joints being less flexible than those that have more play. To secure tightness a "thread" of fine rubber is fed into the interspace of the joints while the tube is in process of manufacture, and this is said to render it quite tight for gases and liquids under slight pressure and for steam and water under very heavy pressure especially. The liquid under pressure has the effect of tightening the joints. The tube weighs about the same as does India-rubber tubing of the same strength, and will, no doubt, endure rough usage better. The degree of flexibility may be judged by a half-inch tube which will coil around a circle of five inches diameter.

Rotary Snow-Plows.—Since their invention a few years ago, these plows or excavators (for they are not properly plows) have undergone many improvements. The latest model, known as the Jull centrifugal snow excavator, has recently achieved such a notable success in breaking a snow blockade on the Union Pacific Railway as to merit especial notice. The first of these machines was tried on the Rome, Watertown,

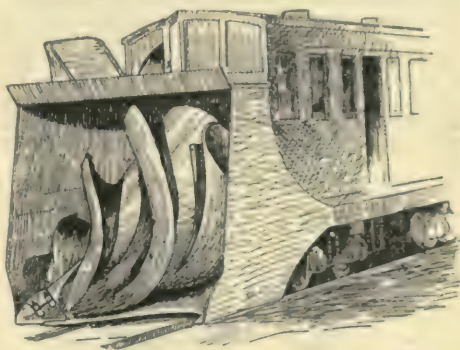


FIG. 24.

and Ogdensburg Railway on March 6, 1880. For 750 feet the track was covered with frozen snow to a depth of from 2 to 7 feet. The excavator went through it without a halt. After other tests the Union Pacific Railroad bought the machine and sent it to Kansas, where it broke the most formidable snow blockade that has recently occurred in the mountains. The machine (see Fig. 24) is 50 feet long without its tender, which is similar to that of an ordinary locomotive.

In front of the structure is the rotating screw with its point quite near the ground at one side. This screw is like an immense cone-shaped augur presenting cutting edges of steel with curved helix-like wings, that hurl the snow backward and to one side. Suppose this huge bulk to be moving forward at a speed of about 8 miles an hour, with the excavator, driven by 800 horse-power turning at the rate of 300 revolutions a minute. It would seem

that snow in almost any form short of solid ice must yield before such a powerful engine. In point of fact, this plow accomplished work that had defied all the energies of the railroad. The cone weighs about 6 tons, and clears a track 11

feet wide. The plow is pushed by 1 or more locomotive engines, according to the depth of snow. It cleared the track between Baker City and La Grande, a distance of about 80 miles in two days, removing a mass of snow that might otherwise have impeded travel until the opening of spring. It is announced that the machine that has rendered such good service is to be tested in removing drifted sand from the tracks of the Union Pacific during the summer. If successful, there seems to be no reason why the same principle should not be effective in dredging silt or mud in some of the great engineering works now in progress.

Ships' Windlasses.—Many improvements have been made in recent years in the mechanical appliances used for hoisting heavy weights on shipboard, especially anchors and the like. The old-fashioned wooden capstan with its direct-acting attachments is now seen only on the antiquated craft of a former generation. The modern capstan is of iron and steel throughout, with mechanical connections that largely increase its efficiency and enable an instant change if desired from a high power and slow speed to high speed and diminished power. Such adjustments are especially desirable in the case of steam-ships. When the anchor holds firmly a tremendous force can be applied until the grip is broken; then, by simply moving a lever, the speed can be largely increased, and the anchor hoisted to the davits while the ship gets under way. Steam connections are now usual between

should steam give out; hence a compact and scientifically constructed reproduction of the old wooden capstan is often found on deck, especially in large vessels. On smaller vessels and yachts, windlasses are generally used and operated by

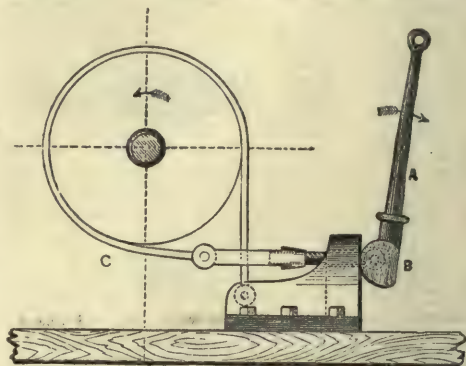


FIG. 26.

what are termed pump brakes or by levers working on the ratchet principle. In Fig. 25 the Providence capstan windlass is shown as one of the most perfect machines of its class. It is used on the new United States men-of-war and on a large number of first-class American vessels. This, it is claimed, is the only windlass made with a single-headed capstan capable of doing

double duty. The engraving shows the general arrangement of shafts and bearings, but some of the recent improvements can not be shown in a single perspective drawing. The capstan shaft, for instance, steps upon a center bearing for the windlass shaft which extends downward and is bolted to the deck. It is also re-enforced by a solid casting bolted to the pawl-bitts. These double supports render it almost impossible for the windlass shaft to spring or break. The wheels upon which the chain cables rest are called "wild-cats," because they can be disengaged and allowed to turn freely upon the windlass shaft. They are formed so that the links lock themselves between converging flanges, and the cable can not slip so long as it rests in the angle. The wild-cats are readily locked to the shaft or unlocked by means of a lever inserted in the

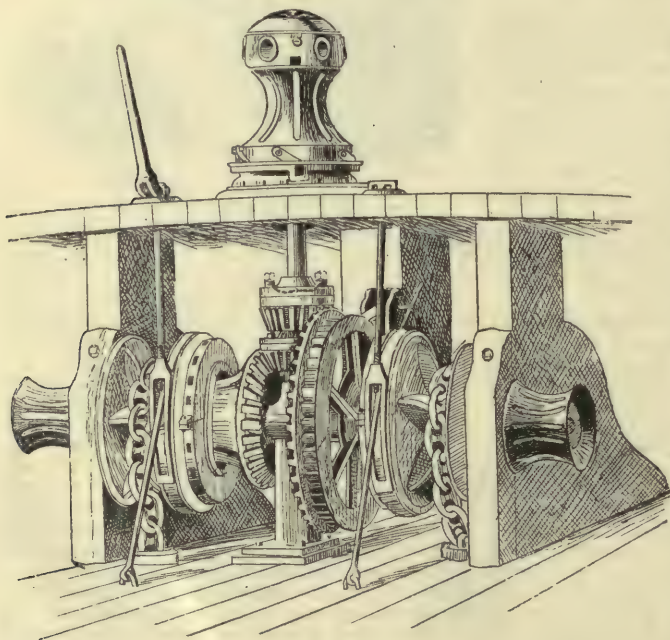


FIG. 25.

the donkey engine and the windlass, and the once tedious operation of weighing anchor is reduced to an affair of a few minutes, steam doing all the hard work. It is important, however, that the machinery be manageable by hand power

square holes. The detachable lever operates a steel friction band that passes around a drum connected with the wild-cat, and is firmly bolted to the deck (Fig. 26). This locking and friction arrangement is duplicated at the other side of

the windlass. Outside the end bearings of the windlass are the usual drums for operating hawsers or other lines in heavy hauling or hoisting. When steam is used to operate the windlass the connection is made through an endless screw operating on the large cog wheel, which is in that case shaped differently to accommodate the changed conditions. It is sometimes desirable to operate the friction band from the lower deck, and in that case the lever is placed as in Fig. 26, which shows the ingenious method whereby the wheel is clasped on all sides by the friction band. *A* is the lever, *B* an eccentric bearing, *C* the friction band. When the lever is depressed in the direction of the arrow it is evident that the lower part of the band is powerfully drawn toward *B*, and any desired pressure exerted upon about three quarters of the periphery of the wheel.

Binocular Vision in Great Telescopes.—

The production of the telescope represented by the accompanying drawings was suggested by the fact that Nature created men with two eyes, but none with one; and as the Creator never makes a mistake nor wastes his energies in making two things where one is sufficient, it was logical to suppose that two eyes are better than one for the purposes of vision, and that when we peep into the telescope with one eye shut we are only using half the means that Nature has placed at our disposal in endeavoring to solve the visual problems of the universe. The doctrine has been persistently set forth that any attempt to adjust two great telescopes into the conditions of binocular vision must of necessity result in failure, as two such instruments would always show the same object double; but the double telescope here represented showed, when completed, only a single image of any object at which it was directed; and when it is properly adjusted to the eyes of the observer, two images of the same object can not be seen, but the image is better defined and more than twice as bright as that in either telescope when viewed with a single eye, for the reason that the loss of one eye makes us more than half blind. Fig. 27 is a longitudinal section through the center of the instrument, showing the convergence of the light of a star that enters it. In the instrument *A*, *L* is the object glass, and the dotted lines *C, C*, represent the light being gathered to the focus *F*, by which it may be seen that it is only the ordinary form of telescope. Its companion, *B*, is so placed as to be perfectly parallel with *A*, and they are secured together by the couplings *D, E*. The object glass in this instrument is within the tube, but farther back than that of its companion. The focal length of the two object glasses being the same, it is necessary to place it far enough back in the telescope to compensate for the length of the cross adjustment, *G*, at the final focus, the nature of which will be understood by following the dotted lines that converge from the object glass, *O*, to the focus. A prism or speculum at *H* reflects this converging light transversely to its original direction, as shown at *I*; it is then intercepted at *J* by another prism or speculum and reflected to the final focus of that telescope at *K*. The cross adjustment *G* is constructed so as to slide, in order that the two eye-pieces *F* and *K* may be adjusted to the different distances between the

eyes of different observers. In this telescope, *B*, there is also an additional rack and pinion, *P*, for moving the object glass, *O*, a little back or forward, so that the eye-pieces, *F* and *K*, may be coincident in position. The eye-piece *K* has the direction of the dotted line *M*, which converges to the point *N*, on the optical axis of *A*, sufficiently distant from the observers to give the eyes an

easy angle of visual convergence. At this point the images of both telescopes coalesce, and thereby present to the observer only a single image of a single object, and instead of seeing two images of the same object it is simply impossible to divide the single binocular image into two unless by pressing the ball of one eye out of its natural position. When it is necessary to use this instrument for two observers at the same time, or by mas-

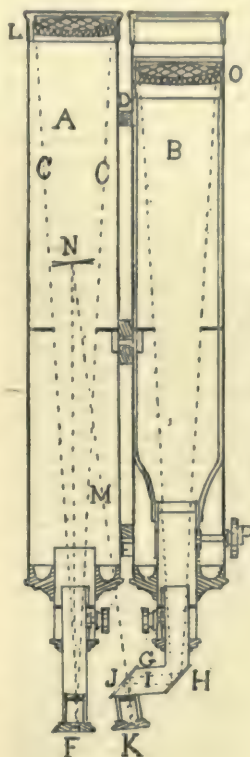


FIG. 27.



FIG. 28.

ter and pupil, the cross adjustment, *G*, is removed, and then the eye-piece end takes the form shown by Fig. 28. Thus the instrument is practically two telescopes, which will always have the image of the same object in their respective foci, thereby furnishing the master with the means of describing to the pupil.

One of the advantages of constructing great telescopes for binocular vision is to be found in the fact that the intensity of light brought to the focus by two object glasses of thirty inches in diameter would be greater than that brought by a forty-inch objective to its focus. As their relative focal lengths would be proportioned to the diameter of their object glasses, the observatory for the shorter instrument would be much smaller and less costly than that of the forty-inch instrument, but the double telescope would have much the greater space-penetrating power. As that quality is proportionate to and dependent upon the relative brilliancy of the image at the focus, the space-penetrating powers of the double instrument would be superior to that of the greater in the proportion of sixteen to

nine. This double telescope is the invention of Charles B. Boyle, of New York.

PENNSYLVANIA, a Middle State, one of the original thirteen, ratified the Constitution Dec. 12, 1787; area, 45,215 square miles; population, according to the census of 1890, 5,258,014. Capital, Harrisburg.

Government.—The following were the State officers during the year: Governor, Robert E. Pattison, Democrat; Lieutenant-Governor, Louis A. Watres, Republican; Secretary of the Commonwealth, William F. Harritt, Democrat; Treasurer, Henry K. Boyer; Auditor-General, Thomas McCamant; Secretary of Internal Affairs, Thomas J. Stewart, Republican; Superintendent of Public Instruction, D. J. Waller, Jr.; Secretary of Agriculture, Thomas J. Edge, Republican; Adjutant-General, William McClelland, Democrat; Attorney-General, W. U. Hensel, Democrat; Insurance Commissioner, J. M. Forster to May 25, and afterward G. B. Luper; Chief Justice of the Supreme Court, Edward M. Paxson; Associate Justices, James P. Sterrett, Henry Green, Silas M. Clark, Henry W. Williams, James T. Mitchell, and J. B. McCollum.

Finances.—The following was the report, Nov. 30, 1891: The balance in the State Treasury Nov. 30, 1890, was \$4,426,645.45; the total receipts during the year were \$13,007,161.74. This revenue was derived from the following sources: Lands, purchase money, and interest, \$1,948.27; fees for warrants and patents, \$994.08; tax on corporation stock and limited partnerships, \$2,378,911.54; tax on gross receipts (corporations), \$696,176.62; tax on gross receipts (notaries public), \$4,402.21; tax on gross premiums, \$55,040.68; tax on bank stock, \$413,177.45; tax on net earnings or income, \$68,405.44; tax on loans, county and municipal, \$122,800.20; tax on loans of private corporations, \$1,289,220.41; tax on personal property, \$1,906,244.67; tax on writs, wills, deeds, etc., \$172,443.82; tax on collateral inheritances, \$1,232,766.80; tax on sale of fertilizers, \$8,710; foreign insurance companies, \$395,307.97; eating-house licenses, \$11,339.99; retail liquor licenses, \$440,249.18; wholesale liquor licenses, \$422,479.77; brewers' licenses, \$144,801.39; bottlers' licenses, \$94,196.62; retailers' licenses, \$552,981.83; billiard licenses, \$45,296.24; brokers' licenses, \$41,224.46; auctioneers' and peddlers' licenses, \$28,799.62; theatre, circuses, etc., licenses, \$29,832.25; pamphlet laws, \$530.45; bonus on charters, \$243,831.87; accrued interest, \$14,531.87; penalties, \$121.95; notaries public commissions, \$20,200; Allegheny Valley Railroad Company, \$192,500; United States Government, \$1,825,886.44; annuity for right of way, \$10,000; escheats, \$1,895.13; fees of public officers, \$92,541.10; refunded cash, \$7,759.76; conscience money, \$215; miscellaneous, \$21,204.66.

The expenditures include the following items: Expenses of State officials and departments, \$2,006,717.95; loans redeemed, \$2,538,352; interest on loans, \$535,553.25; premiums on loans redeemed, \$58,591.59; charitable institutions, \$627,072.85; care and treatment of the indigent insane, \$509,282; penitentiaries, \$95,140; State Industrial Reformatory, \$92,943.50; Reform School, \$60,409.18; House of Refuge, \$65,000; agriculture, \$2,730; second geological survey,

\$5,000; State tax on personal property returned to counties, \$436,558.53; Soldiers' and Sailors' Home, \$72,500; Soldiers' Orphans' Schools, \$132,393.01; common schools, \$2,289,859.55; National Guard, \$416,689.80; disasters by floods, \$383,602.62; monuments at Gettysburg, \$10,500; pensions and gratuities, \$5,952.75; State College, \$24,057.70; Philadelphia Academy of Natural Sciences, \$25,000; Museum and School of Industrial Art, \$10,000; Nautical School ship, \$10,750; Gettysburg Memorial Association, \$7,500. Other items brought the total amount of expenditures to \$10,453,952.64, leaving a balance, Nov. 30, 1891, of \$6,979,854.55.

The public debt, Nov. 30, 1890, was \$12,349,920.28; on Nov. 30, 1891, it was \$9,811,568.28; total redeemed, \$2,538,352. Following is a statement of the funded debt: $\frac{3}{4}$ -per-cent. currency loan \$1,642,900; 4-per-cent. currency loan, \$6,072,650; 5-per-cent. currency loan, \$1,444,800; 6-per-cent. Agricultural College scrip bond, \$500,000; proceeds of sale of experimental farms, \$17,000; total interest-bearing debt, \$9,677,350. The unfunded debt and debt upon which interest has ceased was as follows: Relief notes in circulation, \$96,143; interest certificates unclaimed, \$4,448.38; interest certificates outstanding, \$13,038.54; 6-per-cent. Chambersburg certificates unclaimed, \$148.66; domestic creditor, \$25; 5-per-cent. bonds upon which interest has ceased, \$18,414.70; 6-per-cent. bonds upon which interest has ceased, \$2,000; total debt bearing no interest, \$134,218.28. The statement of debt redeemed is as follows: $\frac{3}{4}$ -per-cent. loans redeemed by purchase, \$20,600; 4-per-cent. loans redeemed, \$900; 4-per-cent. loans redeemed by purchase, \$658,550; 5-per-cent. loans redeemed by purchase, \$1,858,300; relief note of \$2 canceled; total debt redeemed, \$2,538,352.

Education.—The report of the Superintendent of Public Instruction for the year ending June 1, 1891, gives the following statistics: Number of school districts, 2,338; number of schools, 22,884; number of graded schools, 10,940; number of superintendents, 122; number of male teachers, 8,171; number of female teachers, 16,754; whole number of teachers, 24,925; average salary of male teachers per month, \$40.59; average salary of female teachers per month, \$30.90; average length of school term in months, 7.76; number of pupils, 969,506; average number of pupils, 699,937; cost of tuition, \$7,261,456.05; cost of building, purchasing, and renting, \$2,892,667.68; cost of fuel, contingencies, debt, and interest paid, \$3,364,584.25; total cost of tuition, building, fuel, and contingencies, \$13,578,708.98; State appropriation, \$2,000,000; estimated value of school property in counties, \$17,362,027; estimated value of school property in cities and boroughs having superintendents, \$18,475,867.84. For the city of Philadelphia alone the report was as follows: Number of schools, 2,694; number of male teachers, 105; number of female teachers, 2,589; average salary of male teachers per month, \$133.20; average salary of female teachers per month, \$60.24; number of pupils in school at end of year, 114,306; average attendance, 107,688; paid for teachers' salaries, \$1,568,124.21; paid for houses, additions, and repairs, \$639,375.18; paid for books, fuel, stationary, and contingencies, \$534,894.19.

The net increase in number of districts for the year was 12; in number of schools, 519; in number of graded schools, 190; decrease in number of male teachers, 211; increase in number of female teachers, 643; in salary of male teachers, '73; in salary of female teachers, '80; in school term in months, '38; in number of pupils, 4,062; in cost of tuition, \$323,766.08; in cost of building, purchasing, and renting, \$154,249.27; in cost of fuel, contingencies, debt, and interest paid, \$112,270.53. In the 13 normal schools the total number of male students was 3,417; of female students, 4,118; number of male students in the normal department, 2,676; of female students, 3,327; of boys and girls in the model schools, 1,537; number graduated in the elementary course, 694; graduated in the scientific course, 5; number who intend to become teachers—males 547, females, 820; number who have received aid from State as students—males 1,696, females 2,318; number who have received State aid as graduates—males 285, females 398. The value of buildings and grounds is estimated at \$1,947,363.97, and the total value of property, including furniture, libraries, musical instruments, apparatus, etc., \$2,410,504.36. The amount of debts was \$2,193,568.48, and the cost of improvements and expenses \$200,125.21. The income amounted to \$677,544.16, of which \$66,250 came from State appropriations; the total expenditure was \$620,612.99. The superintendent reports that in many counties the directors are regularly organized in convention, and meet statedly to consider the best solutions of the problems before them. He recommends a lengthening of the school term in the short-term districts, the minimum now being twenty-four weeks, and a law for compulsory education. On this point he says, that while the population of the State has increased within the decade about 23 per cent., and that of the cities nearly 43 per cent., the increase in the public schools is but 11 per cent. He also recommends the introduction of manual training (see *MANUAL TRAINING SCHOOLS* in this volume), and the providing of free text-books. The number of schools supplying them has increased from 1,517 in 1890 to 1,908 in 1891. In reference to appropriations for the public schools, he says: "When the framers of the Constitution of 1873 provided that at least \$1,000,000 should be appropriated each year to the public schools, the generous sum was regarded as excessive by the opponents, and was highly commended by the friends of the schools as almost unprecedented in liberality. It required fifteen years to double that sum. The General Assembly of 1891 has shown its appreciation of the schools, and its expectation as well, by making the annual appropriation five times the sum named in the Constitution."

The Governor's Inaugural.—Gov. Pattison was inaugurated on Jan. 20. In his address he advised legislation to guard the people against the encroachments of corporations. He advocated the Australian ballot system as a remedy for abuses of the suffrage, and urged the early calling of a constitutional convention to remove from the Constitution the provision requiring every ballot to be marked for identification, and the provision that non-registration shall not debar an elector from voting.

In discussing taxation, he said houses and farms bear a vastly disproportionate share of the burden, while personal property and idle capital largely escape their share. The tax on corporations, which is just and easily collected, and the collateral-inheritance tax, furnish sufficient revenue for State expenses. It was therefore recommended that all other taxes and license charges be remitted to the counties. The office of Mercantile Appraisers should be abolished. He suggested that the State Treasurer be relieved from the dangerous discretion of selecting the places of deposit of public funds, and that the money be disposed of by law. Among other changes suggested were reapportionment of the State, an effective civil service in the State appointments, the substitution of salaries for fees, the inspection and regulation of State and private banks, and an extension of the power of the Auditor-General so as to include within his audit all the State accounts, and the rigid enforcement of the law referring to the investment of the sinking-fund money. The mining code should be revised in such manner as will insure the payment of damages in case of injury or loss arising from the neglect or parsimony of the mine-owner.

Legislative Session.—The Legislature began its biennial session in January, and adjourned on May 28. It passed 414 measures, of which 12 were recalled before the Governor had passed upon them. Of the 402 remaining the Governor signed 317 and vetoed 85. Among those passed were the following:

Submitting the question of a constitutional convention to the people at the November election.

Providing for ballot reform.

To relieve employes from certain prosecutions and punishments for conspiracy under common law or under the criminal law.

Providing for the formation of the border-raid commission.

Extending the jurisdiction of the courts in cases of divorce.

Securing the rights of subcontractors to file mechanics' liens, and preventing interference with this right by contractors.

To create a banking department.

Appropriating \$10,000 for the completion of the publication of the geological survey.

Authorizing married women to organize corporations and to be officers thereof.

Requiring registry assessors to visit in person every dwelling-house in their election districts or divisions on the first Mondays of May and December of each year, or as soon thereafter as practicable. This is intended to prohibit the assessor from taking up the transcript or list of voters of the previous assessment. An entirely new registration is to be made.

The appropriation bills for 1891 and 1892 aggregated about \$13,800,000, of which the Governor vetoed items to the amount of \$60,850. The largest item of the appropriation was \$10,000,000 for public schools. The increase in State expenses for the two years is about \$150,000.

Among important bills vetoed was one for compulsory education. Acts for reapportionment of Assembly and congressional districts, to continue till the reapportionment directed by law to follow the next decennial census, and a bill for reapportionment of judicial districts were also vetoed. An act authorizing cities of the State to change, alter, beautify, and improve unpaved

public wharves and landings was vetoed on the ground that it would give city councils the power to deprive important shipping interests of such uses of the water fronts as are essential to their success and of great value to the municipalities.

The Governor's nominations for the offices of Superintendent of Public Instruction, Factory Inspector, and City Treasurer of Philadelphia were rejected by a vote of 16 to 31.

Liquor License.—On June 19, 1891, the Legislature passed an act intending to amend the Brooks law to allow saloon keepers to have bondsmen from any part of the county, instead of ward or township. The amendment was to the act approved May 24, 1887, whereas the Brooks law was approved May 13, 1887. The act amended was one providing for wholesale liquor licenses, and as a result the judges can refuse all license applications because they do not conform to the law.

The Bardsley Case.—On May 21 John Bardsley, Treasurer of the city and county of Philadelphia, who was elected in 1888, and whose term would not have expired till the end of 1891, retired from the discharge of his duties on account of losses of State money placed by him in the Keystone National Bank and tendered his resignation, to take effect on May 30. He was arrested on May 23 on the charge of misappropriating money. It was discovered that he had failed to pay over large sums collected for the State, and that no adequate security had been given for their payment. Criminal prosecution resulted in his plea of guilty, and a sentence to fifteen years' imprisonment in the Eastern Penitentiary for the conversion of public moneys to his own use and for loaning them for interest. The following statements are taken from the Governor's message to the Senate:

The complicated transactions of the ex-Treasurer were the subject of investigation by city and State committees, and representatives of the Treasury Department of the United States were engaged for many weeks examining the books of the national banks in which city and State funds were deposited. The investigations seemed to show that John Bardsley, during most of his official term, was allowed to keep and use a large amount of money which he should have paid into the State treasury, and that he was never called upon by the State Treasurer and the Auditor-General to make the account which the law requires them to exact. The sums so retained by him amounted to more than \$1,250,000. His books indicated that, besides the salary, fees, and commissions to which he was entitled, he had made as interest dividends and bribes nearly \$300,000, the greater part of which was paid to him for the use of the State funds which he was allowed to retain, and for his exercise and abuse of powers, in association with and under control of the departments of the State Auditor and Treasurer. The memoranda and stubs of checks also indicated that Bardsley received large sums of money from publishers of newspapers to which he gave the advertisements of mercantile appraisal lists, paid for by the State. The five appraisers were appointed by Bardsley and the State Auditor-General, and it appeared on investigation that they had returned for advertisement a large list of fictitious names, of persons not residing at the places named, of persons from whom no taxes could be collected, of persons whom they themselves had exempted from year to year, and persons against whom the State had brought fruitless suits at enormous cost for collection again and again; so that out of a total appraisalment of

\$529,799 for 1889 and 1890 the deductions for uncollectible taxes, half the cost of publishing the list (the other half being charged to the liquor licenses), and the cost paid to magistrates and constables in cases where the State received nothing, amounted to nearly \$250,000. The costs of advertising the lists for the two years were about \$270,000, although the Auditor-General testified that no public advantage resulted, and that it was a complete waste of public money. For the same years the costs in delinquent taxes amounted to \$200,000 and over, for which not a dollar was realized; and the credits given for uncollectible taxes amounted to \$425,000. Proceedings were instituted in the criminal courts against the mercantile appraisers.

The testimony of the Auditor-General and the State Treasurer showed that the moneys collected by Bardsley which he failed to pay over amounted to \$1,366,378.59, of which only \$120,000 was secured. In addition to this sum, there was paid to him from the State treasury, Dec. 30, 1890, \$420,000 for the public schools of Philadelphia, no portion of which was applied for that purpose. This was drawn five months before the ending of the school year and seven before the warrants of any one of the other 2,300 school districts were drawn, for the purpose of reducing the balance of money in the general fund below the limit of \$1,550,000, apparently in order to evade the operation of the law requiring the State Treasurer to apply all sums exceeding that amount remaining in the general fund at the beginning of the year to the sinking fund for investment in interest-bearing securities. The cashier of the State Treasurer's office, William Livsey, who drew these warrants, left the State at the beginning of the exposures and remained beyond the reach of the officials and investigating committees desiring his evidence.

Of tax and license moneys that were eventually paid in to the State treasury, large amounts were allowed to remain in the city treasurer's hands long after the time designated by law for their payment. Some were thus retained for his personal use for more than a year. The Auditor-General is required by law to require the payment under penalties; but no penalties or interest were charged and no commissions abated. On the contrary, letters were found from the State Treasurer and the Auditor-General encouraging the city treasurer to retain the funds in his hands.

Special Session.—In view of these facts and the charges against the two State officers, the Governor called a special session of the Senate to meet Oct. 19 for the purpose of investigating the charges and determining whether reasonable cause existed for their removal from office. The message set forth the facts in detail as they had been elicited during the investigation. It recommended also careful inquiry "to ascertain whether reasonable cause existed for the removal of any of the magistrates or constables of Philadelphia because of faithless or dishonest conduct in the performance of their official duties."

The Senate decided to investigate in open session, to request the Attorney-General to assist, and to allow the accused to be heard in person or by counsel. The Auditor-General's reply, through his counsel, to the Governor's charges denied the jurisdiction of the Senate, affirming that under the Constitution he could only be removed on conviction of misdemeanor before a criminal court or on impeachment by the House of Representatives and after trial and conviction by the Senate, the Senators at the time being "upon oath or affirmation." He denied every charge, claiming to have acted in accordance with the law as understood and interpreted by him and his predecessors, and in conformity

with the established usage of his department. The State Treasurer made a similar answer.

A resolution declaring it to be the sense of the Senate that all questions of malfeasance and nonfeasance in regard to the official acts of the said officers were the proper subjects of inquiry in the investigation was tabled, thus postponing the question of jurisdiction. The testimony taken before the joint committee of the Legislature was read. After examination of the accused Treasurer, the argument of his counsel claiming that the Senate had no jurisdiction was heard, the magistrates and constables affected put in a similar plea, and the Senate finally, after a month's deliberation, adopted a resolution declaring that it had no jurisdiction under the Constitution to inquire into, hear, and determine the charges of official misconduct, and to address the Governor asking for their removal. The resolution was adopted by a party vote of 28 Republicans to 19 Democrats.

Election.—At the State election in November the candidates of the Republican party were David McM. Gregg for Auditor-General and John W. Morrison for Treasurer. The Democratic candidates were Robert E. Wright for Auditor-General and A. L. Tilden for Treasurer. The Prohibitionists nominated Messrs. Hague and Drayton for the two officers. The result of the vote was as follows: For Auditor-General, Gregg, 414,583; Wright, 356,431; Hague, 18,511; Gregg's plurality, 58,152. For Treasurer, Morrison, 412,994; Tilden, 358,617; Drayton, 18,429; Morrison's plurality, 54,377.

The question of calling a convention to revise the Constitution was submitted to the people at this election, and was lost by a vote of 173,813 for to 420,598 against the convention. It was desired, among other changes, to introduce the Australian ballot system.

Appointments.—Judge Silas M. Clark, one of the associate justices of the Supreme Court, died on Nov. 20, and on Nov. 28 the Governor appointed Charles E. Heydrick, of Franklin, to succeed him. Charles H. Krumbhaar, of Philadelphia, was appointed Superintendent of the Banking Department, an office created at the last session of the Legislature. W. H. Davis was appointed member of the Geological Survey in place of Jacob Turney, deceased, and B. P. Opdyke, director of the Nautical School.

Riot in the Coke Region.—On April 2 a riot broke out in the coke region. A mob of several hundred strikers attacked the Standard Works, destroyed some of the property, and cut the wires so that no warning could be sent to Morewood. A party of several hundred set out for that place, but meantime the wires were repaired and warning given, and the deputy sheriffs were in readiness to meet the attack. As the rioters passed the company's store they made an attack on it, and raided it as far as they could in a brief time. They then marched to the barn inclosure and attempted to break down the gates. They succeeded in doing this, and as they entered, Capt. Lauer called out to them to halt or he would fire upon them. Their answer was a volley in the direction of the deputies, none of whom was seriously injured. The captain then gave the order, and two volleys were fired before the mob broke and ran. Seven

men fell dead in the road, and about 40 were wounded. The rioters then broke up into small groups and make their escape in various directions. The men killed were all foreigners, most of them Slavs. Two of the wounded died later. Warrants were issued charging the deputies with murder. The rioting was continued by mobs at Leisenring, Monarch, and other places. The coke companies swore out injunctions against 33 of the leaders and instituted criminal charges against them. When evictions were attempted the women fought furiously, and took the lead to a great extent, the men either remaining inactive in obedience to their leaders, or thinking the sheriff and troops would be more careful where women were leading. Workmen were brought in by the car load from outside, and the works started up again.

Supreme Court Decision.—An important decision was rendered by the Supreme Court in the case of the Pullman Palace Car Company against the Commonwealth of Pennsylvania. The Legislature passed an act that the car company should pay tax on its property within the State, the amount on which it was to be assessed to be found by ascertaining the proportion which the number of miles of road within the State over which the company's cars ran bore to the total number of miles in the United States over which they ran, and then dividing the capital stock of the company by the proportion. It was contended by the company that this law was unconstitutional for the reason that it was a regulation of interstate commerce, and that its cars could be taxed only in the State of Illinois. The court, in an opinion by Justice Gray, upholds the constitutionality of the law. "The old rule by which personal property was supposed to follow the person of the owner," it says, "has been modified very much in modern times. In matters of taxation the question is one of legislative powers, and it is for such State legislatures to say whether a company's property shall be taxed at the place of its incorporation or at the place where it goes. There is nothing in the Constitution or laws of the United States preventing a State from taxing property employed therein, like other personal property."

Constitutional Revision.—The vote on the question of calling a convention to revise the State Constitution was as follows: For a convention, 173,813 votes; against, 420,598; majority against a convention, 246,785.

Political.—Elections for Auditor-General and State Treasurer were held in November, and resulted in the election of D. McM. Gregg for Auditor-General, and John W. Morrison for Treasurer. The vote stood: For Treasurer—Tilden, Democrat, 358,617; Morrison, Republican, 412,994; Drayton, Prohibitionist, 18,429. For Auditor-General—Wright, Democrat, 356,431; Gregg, Republican, 414,583; Hague, Prohibitionist, 18,511.

PERSIA, an empire in central Asia. The Shah-in-shah is absolute ruler of the country. Nasreddin Shah, born July 18, 1831, is the fourth of the Shiite Kadjar dynasty, which was established on the throne after a long civil and religious war in 1794. He succeeded his father, Mohammed, on Sept. 10, 1848. The Shah claims obedience as vicegerent of the prophet, though

his spiritual powers are denied by a large proportion of the *syeds* and *mollahs*. The Grand Vizier, who unites the functions of Minister of the Interior, of the Court, and of the Treasury and Customs, is Mirza Ali Askar Khan. Kamran Naib-es-Saltaneh, the Shah's third son, is Minister of War, and commander-in-chief. The Minister of Foreign Affairs is Kavamed Duleh.

Area and Population.—The area of the modern Empire of Persia, which was consolidated in 1502, is about 628,000 square miles. The population was officially estimated in 1881 at 7,653,600 inhabitants, of whom 1,963,800 lived in the cities, 3,780,000 were settled in villages and in the open country, and 1,909,800 belonged to the nomadic tribes. The city of Teheran has about 210,000 inhabitants; Tabriz, 180,000; Ispahan, 90,000; Meshed, 70,000.

Finances.—The revenue for 1888-'89 amounted to 54,487,630 krans, equal at the current price of silver to \$7,804,000, while the expenditure amounted to 50,100,000 krans. For 1890-'91 the revenue was estimated at \$8,644,000. Out of the total sum expended in 1888-'89 the army consumed 18,000,000 krans; 10,000,000 krans went for pensions; 3,000,000 krans for allowances to the princes, and 600,000 krans to other members of the Kadjar family, of whom only 146 are inscribed in the official register, although there are several thousand others; 800,000 krans for the diplomatic service; 5,000,000 krans for the court; 500,000 krans for colleges; 1,500,000 krans for the civil service; 2,630,000 krans for local government; and 800,000 krans for remission of taxes in poor districts. The revenue is raised by taxes assessed on the cities, districts, and villages, the amounts being adjusted from time to time by tax assessors. About a sixth part of the taxes are paid in kind.

The Army.—The army is raised by tribal levies, and in time of peace the troops are not called into active service, except those that are required for service on the frontiers and to garrison the principal towns. In the arsenals there are 50,000 Werndl rifles and 74 Uchatius guns, of which 18 have the caliber of 9 centimetres, 16 of 8 centimetres, and the rest have 7 centimetres caliber. There are also 500 or 600 old smooth-bore cannons. The garrison of Teheran consists of 3 regiments of Cossacks, of 400 men each, and a battery of 6 guns. The war effective is stated at 80 battalions of infantry, of 1,000 men each; 23 battalions of field artillery, of 200 men each; and 125 squadrons of irregular cavalry, of 200 men each. The force that is properly equipped and is fit for field service is supposed to be about 54,000 men. The naval force consists of 2 gunboats, the larger one of 600 tons and armed with 3 guns.

Commerce.—The principal articles of importation are cottons and other tissues, glassware, paper, iron, copper, sugar, petroleum, and tea. The chief exports are rice, opium, tobacco, skins, silk, carpets, gums, wool, dates, and grain. The statistics of the foreign trade are reckoned from the amounts turned in by the farmers of customs, who collect a 5-per-cent. duty from foreign merchants and from 3 to 8 per cent. from native Persians, and retain as their profit about one sixth of the amount received. The total value of the foreign commerce in 1889 was about

\$42,000,000, of which \$16,000,000 represent exports and \$26,000,000 imports. The annual export of opium averages 8,000 boxes, valued at \$3,250,000. The value of dried-fruit exports is about \$1,500,000; of cotton, \$900,000; of carpets, \$600,000; of tobacco, \$550,000; of grain and legumes, \$475,000. The statistics of imports and exports are very imperfect, because the farmers of customs are interested in concealing the amount of the trade, and because there is a great deal of smuggling on the Russian and Turkish frontiers. Tobacco, which is the third article in importance in the list of exports, occupies a more important place in the estimation of the people than even food and clothing, and any cause that has the effect of raising its price diminishes the power to purchase the necessities of life. The *tumbeki*, or water-pipe tobacco of Persia, supplies the bazars of Turkey, Egypt, and central Asia; the *tutun*, or tobacco for the *chibouk* or long pipe, is also exported in large quantities to Arabia, Asia Minor, and the Caucasus; and the cigarette tobacco grown in Ghilan and Mazandaran is exported to Russia, except the small proportion required for home consumption. The greatest care is taken in the cultivation and preparation of tobacco for the market, which gives employment to a vast number of people, and many more are employed in transporting it to the inland markets and seaport towns, while the Government has always collected a large revenue from customs, transit dues, and plantation tithes levied on this article. The estimates of foreign consuls make the total annual production of tobacco 21,700,000 pounds, of which 14,000,000 pounds are consumed in the country and 7,700,000 pounds are exported.

Communications.—A small railroad, 6 miles long, connecting Teheran with Shah Abdulazim, was opened in July, 1888, and since then a Persian capitalist has built 20 miles of railroad between the Caspian port of Mahmudabad and the city of Barfurush. The former railroad, constructed by a Belgian company under Russian auspices, is to be extended to Reshd, on the Caspian. The Russian Gen. Komaroff has planned to build a railroad from the Russian frontier to Meshed, while an English company has projected a rival line for the benefit of the trade with Great Britain and India, which will run from the port of Muhammerah, on the Persian Gulf, to Teheran. An English firm runs a steamer from the mouth of the Karun river, at the head of the Persian Gulf, to Ahwaz. The telegraphs belonging to the Government have a total length of 2,674 miles of single wire. The Indo-European Company works a line of 735 miles, with 2,205 miles of wire, between Bushire and Ispahan and 415 miles, with 1,245 miles between Teheran and Julfa. The post-office, organized by Austrian officials in 1877, carries letters regularly between the principal cities.

Political and Financial Affairs.—The hopes of the Russians to extend their political influence in Persia by means of commercial enterprises have not met with much success, and those of the English with still less, thus far. Sir Henry Drummond Wolff, who was succeeded in the British legation at Teheran in the autumn of 1891 by Sir Frank Lascelles, obtained various concessions after his arrival in November, 1887,

which the Shah was willing to grant as a means of playing off the English against the Russians, who had secured a monopoly of the trade of northern Persia by prohibiting the transit of English goods by the Black Sea to the Caspian. The opening of the Karun route, from which much was expected, has proved valueless because the means of transport from the head of navigation through the desert regions to the centers of population and of consumption in the northern provinces are primitive and very expensive. The Shah granted in 1889 the right of establishing a national bank, with the power of issuing bank notes not exceeding the sum of £800,000, without the further consent of the Persian Government to Baron Julius de Reuter, who formed an English company and began business in Persia in October, 1889. This company acquired in April, 1890, the business of the New Oriental Bank of London, which had established branches in Persia in the summer of 1888. It has the exclusive privilege of working all iron, copper, lead, mercury, coal, petroleum, manganese, asbestos, and borax mines not already conceded. For the first ten years its notes must be protected by a reserve of 50 per cent. in silver, and after that by 33½ per cent. A monopoly of tobacco, which was farmed out to the Imperial Tobacco Corporation, went into operation in February, 1891. The concessions granted to Europeans aroused an antipathy against foreigners, which was encouraged by the speeches of fanatical *mollahs* and led to a riot at Shiraz during the feast of Ramazan. The tobacco monopoly was so unpopular that it could not be carried into effect, and therefore the Shah canceled the arrangement and abolished the monopoly by a proclamation issued on Dec. 27. Serious disturbances occurred before this was done. The *mujtahid*, or Shiite high priest, headed a revolt in Mazanderan in November, which it required a large body of troops to put down. Negotiations for an extradition treaty between Russia and Persia, which should apply to political refugees, were carried on in the autumn, and it was rumored that Russia had proposed a commercial union or treaty of reciprocity, which should have the effect of excluding other nations from participation in the foreign trade of Persia, and even an arrangement, implying a virtual protectorate, by which Russian diplomatic representatives should attend to the political interests of the Persian Government in foreign capitals.

PERU, a republic in South America. The Senators, in the proportion of 1 to every 30,000 inhabitants, and the Representatives, 2 from the departments having 2 provinces, and 1 more for every additional 2 provinces in the other departments, are chosen indirectly by provincial electoral colleges composed of delegates of the parochial electoral colleges. The President, who is elected for four years, appoints his Cabinet of 5 ministers. Col. Remigio Morales Bermudez was inaugurated as President on Aug. 10, 1890. The 2 Vice-Presidents, who take the place of the President in case of his death or incapacity, are Pedro Solar and Col. Bergono. The Cabinet first appointed resigned on Aug. 24, 1891, having refused to answer interpellations in the Senate regarding the attempted revolution

of December, 1890. The new ministry was constructed as follows: Prime Minister and Minister of War, Justiniano Bergono; Minister of Foreign Affairs, Juan Elmore; Minister of the Interior, Señor Lerra; Minister of Justice, Señor Serpa; Minister of Finance, Señor Carbajal.

Area and Population.—The area of the republic, which is divided into 19 departments, is 463,747 square miles. The population, as determined by the census of 1876, was 2,621,844, not including 350,000 uncivilized Indians. Lima, the capital, has 101,488 inhabitants. The Catholic is the state religion, and the public exercise of other forms of worship is prohibited, though in practice Protestant and Jewish worship is tolerated. Education is free and compulsory. About 20 per cent. of the people are of Spanish descent, 23 per cent. are of mixed blood, and 57 per cent. are Indians.

Finance.—The revenue for 1890 amounted to 6,957,349 silver soles or dollars, of which 4,995,944 soles were derived from customs, 914,150 soles from internal taxes, and the rest from railroads, posts, telegraphs, and other sources. The expenditure amounted to 6,073,967 soles, of which 2,257,977 soles were spent on the army and navy, 1,076,632 soles on financial administration, 1,012,994 soles on the interior, 412,580 soles on justice, 220,807 soles for foreign affairs, 753,918 soles on railroads and for extraordinary purposes, and 339,061 soles for other purposes.

The foreign debts that were contracted in England in 1870 and 1872 for the construction of railroads amounted to £31,579,080, without counting defaulted interest. It was secured on the guano deposits that were seized by Chili. No interest has been paid since 1876, and the arrears in 1889 amounted to £22,998,651. An arrangement was made with Chili by which a certain percentage of the guano should go to the bondholders. By the Grace-Donoughmore contract, finally concluded in January, 1890, the Peruvian Government obtained a release from all responsibility for the two debts by ceding all the state railroads to the English council of foreign bondholders for sixty-six years, and transferring the mines, lands, and guano deposits belonging to it, while the bondholders agreed to complete and extend the system of railroads. For the conversion of anterior obligations, a limited-liability company has been constituted in London. The internal debt was officially estimated in 1888, at 109,287,000 soles, not including 83,747,000 soles of paper money. The interest on the internal bonds has been reduced to 1 per cent., and their market price in 1891 was 11 per cent. of their nominal value. The paper notes and incas are no longer accepted as money, and by a recent law they may be exchanged for internal bonds at the rate of 1 sol in bonds for every 15 soles of notes, the inca being reckoned at 8 soles in notes.

The Army and Navy.—The law of Nov. 20, 1872, introduced obligatory military services for three years in the active army and two years in the reserves. Substitution is nevertheless permitted, and the annual draft is only 1,383 men. The peace effective consists of a body of gendarmerie, numbering 150 officers and 3,350 men; 7 battalions of infantry, with about 290 officers and 2,833 men, who are armed with Peabody

and Martini-Henry rifles; 3 regiments of cavalry, numbering 80 officers and 800 men; and 1 regiment of field artillery, numbering 33 officers and 360 men, consisting of 4 batteries of 8 pieces each, mostly Krupp guns of the model of 1880. The naval force consists of the cruiser "Lima," of 1,790 tons, and 2 steam transports.

Commerce and Production.—The agricultural products of Peru are sugar, cotton, coffee, cacao, rice, and tobacco. The coast region, in which the main part of the cultivated land is situated, could be made more productive by irrigation, and in the mountains the area of cultivation could be greatly extended. Sugar is the most important crop. The yield was formerly 100,000 tons a year, and it is now about 70,000 tons of sugar, of which 50,000 tons, valued at \$4,000,000, are exported. Rum is manufactured also in large quantities. In the northern provinces the cane is planted once in six or seven years. Cotton also is grown in the north without replanting, being gathered from a tall shrub which bears for several years. The fiber is coarse, and is used chiefly for mixed woollen textures. The annual value of the crop is about \$3,000,000. Rice, though less certain, yields abundantly on the low plains in the north, when the season is favorable. Coffee is raised of good quality, but not in excess of the domestic demand. The grapes of the southern coast provinces are celebrated, and the annual product of wine is valued at \$4,000,000. The Irish potato grows luxuriantly, both in the mountains and in the lowlands, and corn, which in some places yields 2 crops a year, constitutes the staple food of a large part of the population and supplies the national beverage, the stimulant called *chicha*. The cacao of Cuzco and the protected valleys of the Sierra is of superior quality. Coca flourishes in the hot valleys on the eastern slope of the Andes, and is cultivated to some extent, as well as gathered in its wild state. The wanton destruction of cinchona trees in accessible localities has given the planters of the British and Dutch East Indies the advantage in supplying what was once a great staple of Peru. Alfalfa is raised extensively for fodder. Wool is grown on a large scale in the mountains, and exported to the amount of \$4,000,000 a year. The exports of the valuable wool of the alpaca and the vicuña are considerable. Of the forest products the most important is India-rubber. Sarsaparilla and other medicinal plants, vegetable ivory, balsams, and dyes are also exported. The deposits of guano and of cubic niter have for the most part been ceded to Chili, and the guano rocks remaining in the possession of Peru have been nearly exhausted. The mineral products of the country are many and varied. The principal silver mines are Cerro de Pasco, Castrovicuna, and Recuay. The silver produced in Peru and that contained in the 12,500 tons of ore exported in 1888 was 120,000 kilogrammes. Great quantities of lead are also extracted. Gold is found in all the departments excepting three. Most of the fields have been abandoned by foreign miners. Rich washings in the streams flowing into the Amazon and promising ledges in the eastern Cordillera are not worked on account of their remoteness from the coast and the difficulties of transport. Sulphur, gypsum,

asphalt, and petroleum are found in extensive deposits, though these resources are not yet utilized. Vast beds of coal, both bituminous and anthracite, have been discovered in the northern mountains in localities not yet provided with railroads. The great deposit of salt near Huacho, on the coast, is constantly renewed by the percolation of sea water through the porous rock.

The foreign commerce is chiefly carried on with Great Britain, with France, of late years with Germany also, and to a not inconsiderable extent with the United States. The total reported value of the imports in 1887 from Great Britain was \$3,489,869, consisting mainly of cotton manufactures (constituting two fifths of the total), and of iron and steel goods, wool manufactures, linen, and coal. The imports from France were \$1,055,625, the chief items being leather, woollens, apparel, and fancy articles. The imports from the United States, \$717,968 in value, were more varied in character than those from any other country, the largest items being cotton goods, manufactures of iron and steel, provisions, and furniture. The imports from Germany were valued at \$330,334, more than half of this sum representing manufactures of flax. The exports to the United Kingdom in 1887 amounted to \$7,981,916; to France, \$4,794,107; to Germany, \$1,656,718; to the United States, \$309,040. The cubic niter, except the small proportion taken by the United States, goes in nearly equal amounts to France and England, raw sugar and cotton to England, and hides and skins to France and the United States, while Germany received nearly the whole of the silver ore and very little else. The exports to Great Britain in 1888 amounted to \$9,541,080, and in 1889 to \$6,297,139, while the imports from Great Britain were \$5,589,715 in the former and \$4,663,562 in the latter year. The exports to France were valued at \$8,030,249 in 1888, and at \$8,670,891 in 1889, four fifths consisting of nitrates, while the imports from France in those years were \$1,071,949 and \$1,332,090, respectively. The exports to the United States were \$309,040 and \$314,332, and the imports from the United States \$865,160 and \$773,244 in the respective years.

Railroads and Telegraphs.—The Peruvian railroads have a total length of 1,625 miles, built at a cost of over \$150,000,000. The State telegraph lines in 1889 had a length of 1,564 miles. The American cable on the west coast gives communication with all the world.

PHOTOGRAPHY, RECENT PROGRESS IN. The advances of photography within the past few years, while not realizing certain extravagant predictions prompted by the early successes of the dry plate, have been in many respects extraordinary. This activity has been due largely to the increasing popularity of the camera among amateurs, and largely also to the increasing usefulness of photography in various sciences and in the reproductive processes. The popularization of the camera has not always fostered a recognition of the essentially scientific basis of photography and the artistic phases of the product have sometimes tended to obscure the mechanical and chemical requirements. Now that much of the novelty of "instantaneous" picture-making has worn off, the first principles of the science are receiving more general attention.

Lenses.—An important advance in the manufacture of lenses has resulted from the recent adoption of Jena glass by Carl Zeiss, who has obtained objectives entirely free from spherical aberration and astigmatism. Another interesting movement is made by Dallmeyer in the production of a telephotographic lens for giving enlarged images of distant objects. Enlarged images have hitherto been produced by long-focus lenses, or by placing a secondary magnifier behind the plane of the primary image. The new lens is composed of two elements, and the image formed by it is primary and inverted. The anterior element is a positive lens of large aperture and short focus; the posterior lens is a negative element of a fractional part of the focal length of the anterior positive; and in estimating the rapidity or intensity, the shorter the focus of the posterior lens as compared with that of the anterior lens the greater is the size of the image for a given extension of the camera. The main object of the invention is to throw the nodal point from which the focus is actually measured to any desired distance into a space in front of the lens itself, thus attaining a large image without the aid of a bulky apparatus. The lens is said to possess wide adjustability, and to promise important results in astronomical photography. A new Gundlach lens is on the basis of Steinheil's double meniscus, which has been transformed into a triple meniscus. A flint-glass lens is inclosed and protected by crown-glass lenses, ground so thin as to minimize the possibility of a yellow tinge. English lens makers have urged an agreement on some uniform plan for the threads and flanges of lens mounts.

Cameras.—Improvements in cameras have been generally in the direction of greater lightness for field work, the substitution of cams and other devices for screws, etc., to facilitate rapid adjustment, and the development of the swing-back and reversing features. The most striking advance has been in the devising of hand cameras. Cameras that might be operated without a solid rest became possible when negative surfaces reached a stage of sensitiveness permitting an adequate exposure in a fraction of a second. With the improvements in the dry plate have come a multitude of portable cameras, many of them of great ingenuity. The earliest examples were provided with an automatic exposur or shutter, capable of speed adjustment to meet the requirements of the light and the amount of motion to be overcome. A device, aided by an exterior indicator, adjusted the focus by an estimate of feet, and provided for the use of the universal focal point in the lens. A small camera-obscura attachment enabled the operator to locate the image. Recent modifications have aimed at a reduction of weight, and at convenient methods of storing plates or films within the box. The panoramic idea has been worked out with films and with paper rolls, and many magazine forms have been adopted, though few have been entirely satisfactory. Roll surfaces are arranged to receive 100 or more impressions. Magazines for glass or cut films usually provide for one or two dozen negatives.

Among the cameras devised with a view to unobserved operation there are many curious forms. One German camera takes the shape of

a book. Another is operated in the hat. A vest camera has been used in this country, and many of the more conventional forms are placed in cases resembling satchels, lunch baskets, etc.

The development of the hand camera has had an important influence on the arrangement of cameras in general. Many of the later tripod cameras are now provided with a variety of convenient devices, facilitating the use of the camera under conditions demanding readiness and portability. Among the fanciful results of recent improvements in rapid photography has been the automatic arrangement that takes its place beside the weighing machine and the public phonograph. The "nickel-in-the-slot" photographing machine resembles a round stove. On opening the iron door a clockwork is seen below, putting the whole mechanism in motion by a spring. The principal feature is a vertical axis acting as rotating power for a plate-catcher. At the moment the piece of money is dropped, shutting off the electric current, a ferrotype plate drops from a carrier and is caught by the catcher and moved horizontally around a ring in a vertical position. This ring contains several circular dipping baths of gutta-percha, into which the plate, held by the catcher, is immersed and then raised at certain intervals. The plate passes first the collodion bath, after that the silver bath, and then the bell sounds, warning the sitter to be quiet, and the exposure takes place. The plate now plunges into the developer, washing bath, fixing bath, and again into water; then it is moved outside of the circle and dried over a flame. The entire process occupies about two minutes.

Sensitive Surfaces.—Dry plates continue to increase in sensitiveness, though makers are now content to promise even an infinitesimal advance. The complaint that more attention is paid to the attainment of rapidity than to a better image-bearing quality is often justified.

Gaedicke, of Berlin, has announced the invention of a collodion emulsion which is claimed to be equal in sensitiveness to the most sensitive gelatin emulsion. The new emulsion is said to be easy to manipulate, and to be capable of producing results rivaling those of any other method. The announcement is of particular interest to those who have been loyal to collodion processes throughout all the advances of the gelatino-bromide emulsion. For certain classes of work, particularly for lantern positives, the collodion processes have never been equaled by the later processes.

The practice of "backing" plates has come into favor, especially among out-of-door workers. Talbot Archer mentions two backings as finding special favor in England. The first is bitumen dissolved in benzine and poured on the back of the plate. It hardens in a few minutes and is removed with the help of a broad chisel before development. The other is a creamy mixture of burnt umber or burnt sienna with gum and methylated spirit, applied with a piece of wash leather and removed with a damp sponge. E. J. Wall recommends smearing black enamel paper with glycerin and squeegeeing the paper upon the back of the negative. The object of the backing is, of course, the prevention of halation, and the precaution is valued, in all cases,

indoors or out, where the subject presents violent contrasts of light and shade.

The successful use of "orthochromatic" plates has greatly increased the interest in the study of approximated color values in the photographic image. The orthochromatic plate is designed to overcome wholly or in part the difficulty brought about by the varying degrees of actinism in colors that the camera is called upon to interpret. That blue, which is intensely actinic, and yellow and red, which are relatively non-actinic, should be rendered by the negative in exaggerated contrast has been a serious drawback in the photographic image. A plate having an increased sensitiveness to yellow and red and a decreased sensitiveness to blue makes it possible to translate nature more fairly. In the copying of paintings the ordinary plate gives the blue sky as white, and objects in the rich red and orange tones lose most of their modeling. A plate giving better gradations of color is proving of great usefulness, especially as the photographic negative is the basis of so large a number of reproductive processes. For portraiture these plates have been serviceable by reason of the fact that they do not exaggerate freckles or other facial blemishes, and give better tone values to brown and reddish hair as well as to the eyes. Schumann gives the following formula for preparing orthochromatic dry plates with a cyanine bath: Soak the plate in 200 c. c. of water and 2 to 4 c. c. of stronger ammonia for two or three minutes; then immerse in distilled water, 200 c. c.; alcohol, 10 c. c.; stronger ammonia (0.9), 4 c. c. alcohol solution of cyanine (1 in 500), 10 c. c.

Ives's chlorophyll and eosin process for orthochromatic dry plates is this: Use any good bromide collodion emulsion that contains no free nitrate of silver. Flow plate as usual, and as soon as the emulsion film sets flow several times with strong alcoholic solution of chlorophyll from blue myrtle or plantain leaves; then immerse in water strongly tinted with blue shade eosin, and keep in motion until smooth. This sensitizes for all colors. A very light yellow screen is sufficient to secure correct rendering of color values.

Photography in Color.—No movements or speculations in photography have excited greater interest than those related to the search for the photograph in color. At frequent intervals during a long period the announcement has been made that this philosopher's stone of the photographic science was at last found. The repeated disappointments have evoked a natural skepticism in many quarters, but each new announcement excites fresh hope that the dream is to be realized. All the early workers sought to catch the colors of nature. Sir John Herschel claimed to have seized a faint colored image of the solar spectrum. Becquerel, who introduced chlorophyll in 1874, produced on metal plates faint images of certain colors. But even these soon faded. Niepce de St. Victor's colored prints quickly faded in daylight. In general the experiments, early and late, have moved upon two lines, one looking to a single positive image in color, the other seeking to produce a positive image in color by the agency of one or more negatives. Collen sought to superpose red, yellow, and blue prints taken from negatives made by

yellow and blue, red and blue, and yellow and red light. Duhauron, who asked for a patent as early as 1868, sought to improve on Collen's plan by the use of color screens to filter the color rays. But the inventor in despair admitted that "the production of good results will . . . involve the manufacture of compounds that have not yet been created." Poirée suggested a different negative for each spectrum color, and Dr. Vogel, in 1885, a modification that was extremely complicated. Dr. Stolze, denying the theory that all colors are based on three primary or principal colors, argued that if three suitable selective color screens were used in connection with color sensitive plates three negatives of the spectrum might be obtained, from which prints in cyan blue, carmine, and yellow, if superposed, would reproduce the color effect of the spectrum. In 1888 Frederick E. Ives, of Philadelphia, taking up Stolze's comparatively indefinite theory, demonstrated a procedure based upon the assumption that, although there are more than three or five or seven primary spectrum colors, all of them can be counterfeited to the eye by three type colors and mixtures of these three type colors. Mr. Ives proved his process by photographing the spectrum itself, employing compound color screens carefully adjusted to secure definite intensity curves in the spectrum negatives, so that they would make color prints that counterfeited the color effect of the spectrum when superposed. Shortly afterward Mr. Ives set forth a new principle, that of making sets of negatives by the action of light rays in proportion as they excite primary-color sensations, and images or prints from such negatives with colors that represent primary-color sensations. Mr. Ives's proposition included the statement that while the spectrum is not made up of three kinds of color rays and mixtures of these, the eye is only capable of three primary-color sensations. Ives claimed to produce the colors of nature in permanent prints from three negatives, or by composite heliochromy. By the use of a combination lantern the colors could be associated in a screen picture of remarkable fidelity to nature. In a statement to the Franklin Institute in June, 1891, Mr. Ives showed that by an improvement on his heliochromatic camera the three negatives could be made from one point of view by simultaneous exposure and on a single sensitive plate. The color prints were made "by a single exposure in transparent gelatin, and separated only when ready to dip into the dye solutions representing the respective color sensations." The recent studies of Carey Lea, of Philadelphia, have been regarded by many as indicating a solution of the problem. Mr. Lea has sought to apply the protochlorides of silver in the form of an emulsion, and the products of his experiments have excited much admiration. In 1890 Franz Veresetz exhibited at Vienna certain glass diapositives and paper prints. The pictures on glass were described as showing "a beautiful ruby-red ground color, with a picture in bright pigments ranging from a deep hue of red to light orange, and from violet to blue. The same colors prevail on the paper positive." But Veresetz is said to have been unable to produce green. The pictures "bore the test of light less intense than the direct rays of the sun."

One of the most sensational announcements of recent times was that made by Prof. Lippmann to the Paris Academy of Sciences in February, 1891, concerning photography in color. The announcement, as communicated by some of the newspaper correspondents, would have made the world believe that Prof. Lippmann had secured a photograph in colors "as vivid as any object in nature." But, speaking of the colors in "Le Moniteur de la Photographie," M. Léon Vidal says: "We only saw them rendered very imperfectly, and certainly we should never have suspected, if we had not been told of it, that it was a reproduction of the solar spectrum with the colors." The experiment represented by Prof. Lippmann's plate is based on the wave theory of light. Since the length of these waves determines the color sensation, Prof. Lippmann seeks, by the action of "crossed" light and "interference," to secure a deposit of silver in layers of a thickness influenced by the wave lengths of the light. The theory of the experiment is thus explained: "The conditions said to be essential to photography in colors are: (1) a sensitive film showing no grain; (2) a reflecting surface at the back of this film. Albumen, collodion, and gelatin films, sensitized with iodide or bromide of silver and devoid of grain when microscopically examined, have been employed. Films so prepared have been placed in a hollow dark slide containing mercury. The mercury thus forms a reflecting layer in contact with the sensitive film. The exposure, development, and fixing of the film are done in the ordinary manner; but when the operations are completed the colors of the spectrum become visible. The theory of the experiment is that the incident light interferes with the light reflected by the mercury; consequently, a series of fringes is formed in the sensitive film, and silver is deposited at places of maximum luminosity of those fringes. The thickness of the film is deposited according to the deposits of silver into laminae whose thicknesses are equal to the interval separating two maxima of light in the fringes—that is, half of the wave length of the incident light. The laminae of metallic silver, formed at regular distances from the surface of the film, give rise to the colors seen when the plate is developed and dried. Evidence of this is found in the fact that the proofs obtained are positive when viewed by reflected and negative when viewed by transmitted light—that is, each color is represented by its complementary color." Lippmann's theory has been severely criticised by Stolze and others, but it is very generally admitted that Lippmann, without having produced a satisfactory image in color, or one in itself materially superior to the image, produced by Becquerel, has entered a path that may lead to important discoveries.

Developers.—Theories of the latent image and of the nature of the action that takes place in development have received little modification or enhanced clearness from recent discussion, but new developing agents succeed each other with great rapidity. Hydrochinon and eikonogen were followed by pyrocatechin, which met with little favor. German operators recommended formaldehyde as an addition to the emulsion and to the developer. Oil of turpentine was sug-

gested for the same use. Crystallon was also advised. The most recent developer, para-aminodiphenol, is a powerful agent, of which much is expected; but it is too early to say much of its practical availability.

Printing Processes.—Recent movements in printing processes show a marked desire to break away from the familiar albumen print. Objections to the albumen print are based upon its color, its surface, and the limitations of the toning system. A large number of new processes present unglazed surfaces. The platinotype process has been widely followed. This process combines with a variety of possible tones a delicacy in detail not frequently given in processes based on an unglazed surface. A process using metallic silver in place of metallic platinum appears with the name "kallitype." This process, in which Dr. Nicol has acted upon the suggestions of Herschel and of Hunt, is thus described: Paper is coated with a solution of ferric citrate, ferric tartrate, or ferric oxalate, or mixtures of all or any of them, and is dried. It is then exposed behind a negative until a faint image is formed, as in platinotype, and the image is developed by treating it with a solution containing 10 per cent. of sodium citrate, 1 per cent. of silver nitrate, and sufficient ammonia to keep the silver in solution. After development the print is immersed in a 20-per-cent. solution of alkaline tartrate or citrate, made strongly alkaline with ammonia, and afterward in two successive baths of a dilute solution of sodium citrate containing free ammonia. The alkaline tartrate or citrate removes the iron compounds, while the ammonia removes the silver compounds, and finally the print is washed in water. A new kallitype process published by Dr. Nicol, and called Kallitype No. 2, coats the paper with a solution containing ferric oxalate, ferric nitrate, silver oxalate, silver nitrate, and oxalic and nitric acids. The paper is exposed until the densest parts of the negative are very faintly indicated, the appearance of the image being very much the same as in the platinotype. For black prints the exposed paper is immersed in a solution containing 10 per cent. of Rochelle salt and 10 per cent. of borax; for purple prints, in 10 per cent. of Rochelle salt and 2 to 5 per cent. of borax; for sepia prints, 5 per cent. of Rochelle salt, 1.25 per cent. of borax, and a small quantity of hydrochloric acid. In each case a small quantity of a dilute solution of potassium dichromate must be added.

Dr. Adolph Freer's "freer type" is based on the fact that diazo compounds in contact with acid sulphites form diazo-sulphonic compounds, and these form no coloring matter. If, therefore, a diazo-sulphonic compound is mixed with an equivalent quantity of a phenol or an amine, no coloring matter is formed. But if the mixture is exposed to light, the diazo-sulphonic compound is decomposed, the diazo compound is set free, and, since a phenol or amine is already present, a coloring matter is formed as fast as the diazo compound is liberated. A few seconds produces a print in daylight, and gaslight may be used.

A recent English patent gives the "primuline process." Primuline is described as a yellow coloring matter containing sulphur. This pro-

cess, applicable to fabrics as well as to paper, is another form of the diazo-type process.

Prof. Newton recently offered a formula for toning without gold, substituting nitrate of lead. The chloride of silver gelatin emulsion paper, first made by Obernetter, has become very popular by reason of the success with which it preserves delicate detail and facilitates printing from thin negatives. The carbon or anotype printing process appears in many new formulas. It is based on the insolubility of gelatin and an alkaline bichromate after the action of light. The color of the image depends on the pigment employed. The great value of carbon is in its remarkable permanency.

Rapid Photography.—The net gain in the rapidity of photographic action within the past few years is not very great, but there have been many useful and interesting advances in methods of employing highly sensitive surfaces. The experiments of Edward Muybridge in photographing animal motion, and the later experiments of Anschütz and others, have opened a broad field of speculation and experiment in movements looking to the use of the tachyscope or similar devices for throwing rapidly successive photographs upon the screen. The suggestions of Edison and others as to the possible co-operation of the phonograph and lantern apparatus in transmitting to later generations both the gestures and the voice of a speaker have been based on proved conditions and possibilities. The number of photographic images necessary to the perfection of this scheme would imply an elaboration of apparatus and a duplication of surface sufficiently great to render the experiment exceedingly costly. Such a partnership would imply some automatic union between the two apparatus at the time the impressions were received, and the re-establishment of the same automatic union at the time sound and image were exhibited.

Shutters or Exposers.—The growth of rapid photography is reflected in the enlarging number of camera shutters. The simple "drop-shutter" form has been greatly and ingeniously amplified. The disk shutter is widely used in portable cameras, as well as in pneumatic adjustable forms. There is much debate on the most desirable shape of opening in transit shutters. Many openings are made adjustable that the exposure may conform to the conditions of the exposure. Combination shutters, working with both drop and flap or with crossing disks, are a feature of recent inventions. One device presents an exposor opening in the center, enlarging to the size of the lens, and closing to the center. This, in many respects, admirable form has the objection of giving the center of the plate the greatest amount of exposure—a tendency already fostered by the natural action of the lens. An effort to secure the exposure from the rim of the lens toward the center is reported. The structural difficulties of such a movement are obvious.

Artificial Light.—The use of magnesium in producing artificial light has been of great service to photography. When properly used this form of illumination has distinct advantages over other forms. The "flash light" has greatly popularized social photography in the drawing-room and at public gatherings, as well as in

scientific and commercial channels. With the flash light mines, caverns, and tunneled districts are profitably explored. The flash pistol or lamp has accompanied the police detective into the opium den and the health officer into the corrupting haunts of the tenement. It is reported that at a gathering of civic and military dignitaries on the occasion of the ninetyeth birthday of the late Field-marshal Von Moltke, Emperor William ordered a series of flash-light pictures to be taken. The resulting negatives were to be used in historical paintings. Numerous incidents of the kind illustrate the serviceable character of this artificial illumination. The value of the magnesium light in portrait photography is now well established.

Capt. Abney announces that magnesium burned in oxygen produces a light 12 times as brilliant as magnesium burned in air. E. J. Humphrey has burned magnesium wire in an oxygen flask and, swinging the flask on the end of a wire or string, softened the edges of the shadows. A platinotype print was made by this light in 55 seconds.

Astronomical Photography.—The progress of this important department of photography has been suggested from time to time in the article *ASTRONOMY*. The partnership of the camera and the telescope has immensely enlarged the scope of astronomical research. The orthochromatic plate has begun to play a part in the survey of the heavens. Since 1887 the astronomers of the world have been carrying out the proposition of Dr. Gill, at the International Congress in Paris, to make a complete photographic map of the heavens. The task of photographing over 20,000,000 stars was divided among those observatories in different parts of the world which are suited by position and equipment for taking up such work. Ordinary telescopes, which bring to a focus the visual rays, are not suitable for photographic work. The superb Lick telescope, which has played an important part in the enterprise just cited, is provided with lenses facilitating the application of the camera. As Jerome Harrison remarks: "The great advantage of the sensitive plate over the eye in astronomical photography is that the impressions produced upon it by light are cumulative. The eye sees no farther into space after gazing for ten minutes than it did in the first minute; but the effect of the light upon the plate in such a case is 10 times as great." Thus this cumulative action of light on the sensitive plate reveals stars and nebulae never detected by the eye, even with the aid of the most powerful telescopes. It has been estimated that an exposure of one hour and twenty minutes can reveal in the negative 400,000,000 stars. Brilliant photographs of the moon are now made in a fraction of a second. An extremely small fraction of a second is sufficient in photographing the sun. Prof. Young estimates the number of photographs of the transit of Venus in 1874 and in 1882 at not less than 5,000. Each succeeding transit is recorded by a greatly increased number of photographic images.

In Other Sciences.—Medical science acknowledges a very considerable debt to modern photography. Recent experiments with the aid of the photographic medium include studies of the

throat and eyes that have communicated significant data. Some recent pictures of the larynx are valuably complete. The image is secured by the aid of electric illumination. From the physiological laboratories are reported efforts to secure photographic records of nervous and muscular action. In the preservation of pathological records in general the camera is of great utility. Photo-microscopy is in extensive operation in many of the sciences. Mining, mineralogy, surveying, and exploration all utilize photographic aid. The photographic corps has become an essential element of the modern army, occupying close relations with the balloon service. Historical events of every description are now photographed *in extenso*. Societies of amateurs, in some recent instances, have secured the co-operation of civil authorities in enabling them to record all events necessary to the completeness of local historical records.

Photo-mechanical Processes.—The revolution in the reproductive arts is one of the results of photographic advancement. Newspaper, magazine, and book illustration have wholly changed in character. There is much competition in the effort to secure a "half-tone" plate direct from the photograph, which may be conveniently printed with type. There has been a rapid advance in this method, which is largely used in illustration of all classes. But in printing qualities no half-tone plate mechanically produced has yet equaled the engraved block, being deficient in depth and in the modifications of surface which the engraver can impart. The faithfulness of the photo-mechanical plate, however, is beginning to be widely prized among artists, who formerly resented any agency but that of engraving, but who now find the improved "process" plate to be possessed of distinct advantages over any but the best engraving. Other photogravure processes have reached a high state of perfection, permitting the printing from plates having all the characteristics of the original photographic plate. Gelatin is playing a prominent part in most of these methods. Several processes use the surface of the negative itself, utilizing the hint offered by the species of relief produced in photographic action.

PHYSICS, PROGRESS OF, IN 1891.
Constitution of Matter. *The Ether.*—Prof. Nipher, in an address before the physical section of the American Association for the Advancement of Science (1891), gives a comprehensive review of the history of this subject. Prof. Lodge, in a British Association address, describes his experiments on the disturbance of the ether in the neighborhood of a rapidly moving body. Arago found no such disturbance, and Lodge's experiments, conducted on a different line, confirm this result. He caused light to fall on a feebly silvered glass plate, so that part was transmitted and part reflected. The rays thus separated were caused to pass in opposite directions between two coaxial steel disks, and then made to interfere. The effect was the same whether the disks were still or rotating rapidly. I. Whiteher ("Electrician," May 8) suggests that many difficulties in our conception of the ether are removed if we regard it not as passive and acted on by external forces, but as a continually

agitated source of energy. He concludes that the most agitated ether is the best insulator of energy, and the quietest is the best disperser.

Molecular Distances.—P. Jacobin (Paris Academy of Sciences, Jan. 12) concludes that all the physical properties of metals of the same group depend exclusively on molecular distance. For instance, for ordinary metals electric conductivity is proportional to the sixth power of the number of molecules in a given volume; for magnetic metals it is inversely as the sixth power of their distance apart.

Mechanics. *Gravity.*—Prof. J. H. Poynting (London Royal Society, June 4) has measured the earth's density and the gravitation constant by a common balance having a beam 128 centimetres long. Two spheres of lead or antimony, weighing 21 kilogrammes each, were so suspended from the arms that their centers were about 30 centimetres above the center of a mass of the same metal weighing 153 kilogrammes. This mass, being placed on a turn-table, could be shifted so as to be directly under either arm of the balance. With the aid of very delicate adjustments and careful precautions the gravitation constant was found to be $\frac{6.6984}{10^8}$ and the earth's mean density 5.4934.

Specific Gravity.—W. J. Sollas ("Nature," Feb. 26) finds the specific gravity of any minute object, such as a butterfly's wing-scale or a drop of blood, by means of a glass tube filled with a heavy fluid diluted with another which does not perfectly mix with it. After standing, the mixed fluid is found to increase continuously in density from above downward, and therefore specks placed in it show their specific gravity by the level at which they float. The instrument is graduated by small floating fragments of mica or minute glass bubbles.

Hardness.—Prof. Auerbach, of Jena ("Reperitorium für Physik"), measures the hardness of a transparent body by pressing upward against a plate of it the spherical surface of a lens by means of a weighted lever. The effect is observed microscopically. He finds that hardness increases with elasticity, but less rapidly.

Flexure.—C. A. Carus-Wilson, (London Physical Society, June 26) has studied the flexure of glass beams by means of the polariscope. The strains thus observed in a loaded beam differ from those usually assumed. The "neutral axis," instead of coinciding with the axis of the beam, is raised in the center, and its shape depends on the load and the span.

Impact.—Prof. P. G. Tait (Edinburgh Royal Society, Jan. 5) finds that solids can be divided into two classes, in one of which the duration of impact remains constant, whatever the distortion, up to a certain limit; beyond this the duration is shorter as the distortion increases. In the other class the duration first increases with the distortion, then becomes constant, and finally diminishes. Vulcanized caoutchouc is a type of the former class, cork of the latter.

Rotation.—K. Prytz ("Annalen der Physik und Chemie" vii, 1891) measures the time of rapid rotation by means of a falling body on which the rotating body spurts a fine jet of coloring matter, thus avoiding the frictional retardation of the tuning-fork method. He

claims to have measured the time of a revolution to within .0002 of a second.

Force and Determinism.—An interesting discussion in "Nature," participated in by C. Lloyd Morgan, E. T. Dixon, and others, was called forth by a statement of Prof. Oliver J. Lodge that no energy is expended in changing the direction of a body's motion, and by his suggestion that the explanation of the control of matter by mind is to be found in some such direction.

Pressure.—L. Cailletet (Paris Academy of Sciences, April 13) describes the huge manometer which has been constructed at the Eiffel Tower. It is more than 900 feet long, and can measure, by the simple weight of its liquid column, a pressure of 400 atmospheres. The tube is of steel, but at distances of 3 metres stop-cocks connect with glass tubes 3 metres long, enabling the exact height of the column to be read off when desired.

Liquids. Solution.—The battle between the adherents of the rival theories of solution ("Annual Cyclopædia," 1890, p. 711) still goes on. James Walker, in a review of the situation ("Philosophical Magazine," October), concludes that the hydrate theory is no longer a serious rival of the osmotic, the list of whose achievements is constantly increasing. Sidney Lupton (ibid., May) examines the methods of Mendeleef, S. U. Pickering, and other advocates of the hydrate theory, and asserts that though the accuracy of these methods is great, it is not so great as to warrant their conclusions. He objects particularly to the method of drawing graphic curves by laths or flexible rulers. Prof. Pickering defends his methods and results in the issue for July, and E. H. Hayes justifies the "lath" method by an elaborate mathematical investigation. Prof. Orme Masson, at the January meeting of the Australasian Association for the Advancement of Science, read a notable paper in extension of the osmotic or gaseous theory. If a solid be heated in a vacuum it first vaporizes, then melts, the liquid continues to vaporize, and finally above the critical point vapor and liquid become homogeneous. So it is, says Prof. Masson, with a solid and a pure solvent. First the solid begins to dissolve, then it melts, and the liquid continues to dissolve; finally, at a certain temperature, the liquid and its solvent become homogeneous. This analogy, he claims, is borne out by facts. His final conclusion is that in every system of solution that starts with a solid and a simple solvent, the solid has a "solution melting-point" lower than its true melting point. Above this two liquid layers exist, each having some of the other in solution. These become homogeneous at a temperature depending on the ratio of the original ingredients. One ratio demands a higher temperature than any other, and this is the "critical solution temperature," above which either ingredient is infinitely soluble in the other. Prof. Ramsay (London Royal Society, March 5) extends these ideas still further. Masson considers only isobaric curves. If isothermal curves be considered, perhaps, on increasing concentration by eliminating one solvent, the other would not separate visibly, but the two would remain mixed till one had been entirely removed. In "Nature" (March

26) Prof. S. U. Pickering criticises Masson's views, and concludes that the existence of a "critical solution temperature" should follow also from the hydrate theory. He objects especially to the word "pressure" as used by the osmotists. Messrs. Wanklyn, Johnstone, and Cooper ("Philosophical Magazine," November) hold that true physical solution includes only cases where there is no change of volume, such as that of sugar and water, and that where there is a change of volume, however slight, there is always chemical action. Carl Barus, of the United States Geological Survey ("American Journal of Science," February), discusses the solution of glass by pure hot water. The solubility is very great at 185° C., and up to this point a mixture of glass and water shrinks by solution more than 11 per cent. The effect of solution is to increase the compressibility. He thinks the solubility of glass is due to the instability of the glass molecule, and concludes that, in many instances, a definite dissociation temperature of the solid must be surpassed before solution sets in. In the same journal (November) Dr. Barus describes similar experiments on vulcanite, which, he thinks, prove that it acts in the same way. This substance has not heretofore been dissolved so perfectly that it could be regained in a solid form, but Dr. Barus has so dissolved it in carbon dioxide, chloroform, the paraffine series, aniline, benzol, and some of the ethers. Vulcanite newly deposited from solution shows curious phenomena of slow elasticity. A stretched thread shortens again very slowly and a twisted thread squirms about like a worm for several minutes. Dr. Barus thinks, however, that the thin solutions of vulcanite are not true solutions, for in sealed vessels they become gelatinous in time. Hofmeister ("Archiv für Experimentale Pathologie") has investigated the swelling of gelatin in solutions. In pure water the effect is less than when some salt is present. He considers the forces involved to be similar to those shown in the absorption of gases by liquids and solids.

Osmosis.—Boltzmann ("Journal of the Chemical Society," April) has investigated osmotic pressure mathematically from the standpoint of the kinetic theory of gases. He finds that the osmotic pressure equals the gaseous pressure that the dissolved substance would exert if it were distributed as a gas through a volume equal to that occupied by the solvent. He assumes that the mean kinetic energy of the dissolved molecule equals that of the gas molecule at the same temperature. Nernst (Berlin Chemical "Berichte," November, 1890) points out that a layer of water between two layers of benzol dissolved in ether acts precisely like a membrane. Ether will dissolve in water, but benzol will not; so, if the two solutions are of unequal strength, osmosis of the ether will take place till they are equally strong.

Capillarity.—Experiments similar to those of Lord Rayleigh ("Annual Cyclopædia," 1890, p. 711) have been made by Miss, Agnes Pockels ("Nature," March 12). She finds that if a strongly contaminated liquid surface be gradually extended, the surface tension at first varies, but finally becomes constant. She calls the former state the "anomalous" and the latter the "normal" condition of the surface. Every solid

body, however clean, contaminates a water surface. Relative contamination may be measured by decreasing the contaminated water surface till it becomes anomalous, and then taking the ratio of its area to the original area.

With equal relative contamination by the same substance, there is no current from one surface to another, but there is always a current from the greater to the less contamination. With different substances there is a current, even if the relative contaminations are equal. For instance, a current flows from a glass-contaminated to a metal-contaminated surface. She concludes that water dissolves even glass and metals at its surface, and that the surface layer can take up more than the internal liquid. (See *Solution*, above.) G. Van der Mensbrugghe (Brussels Royal Academy of Sciences, April 4) concludes that the common surface of two liquids that act on one another is subject to a force whose direction is away from the center of curvature. A case in point is the slow diminution of tension between oil and water, probably due to chemical action.

Crystallization.—Prof. Tito Martini, of Venice ("Rivista Scientifico-Industriale," June), has investigated the crystallization of thin liquid films. With a solution of sodium sulphate near its saturation point films can be formed as with a soap solution. If one of these be evaporated rapidly, a lattice-work of minute crystals will remain. These finally effloresce and fall apart. Crystal films 36 millimetres in diameter were thus formed, and the experiment succeeded also with ammonium chloride and sodium hyposulphite. Lehmann, who has already noted that the optical behavior of certain liquids suggests a crystalline structure, now ("Journal of the Chemical Society," March) raises the question whether isotropic liquids are non-crystalline or crystalline and isometric. He concludes that they are non-crystalline, in view of the free miscibility of liquids. The same experimenter shows that crystals melted between glass plates retain on cooling and recrystallization the former direction of their optic axes. This may be due to a non-melted layer that adheres to the glass.

Explosive Waves.—Berthelot (Berlin Chemical "Berichte," April) shows that the speed of these is not so regular in liquids as in gases. Methyl nitrate in a steel tube explodes at the rate of about 2,100 metres per second.

Evaporation.—P. de Heen (Brussels Academy of Sciences, January 20) concludes that the velocity of evaporation at the boiling point is proportional to the square root of the velocity of the superficial gas current, and that for a given velocity the quantity vaporized is as the vapor tension.

Gases. Compressibility.—Ulysse Lala (Paris Academy of Sciences, Dec. 1, 1890) announces that, between the pressures of 100 and 1,613 centimetres of mercury, the compressibility of a mixture of air and carbon dioxide (when the per cent. of dioxide does not exceed 22) is between the compressibilities of the two gases. It increases in a mixture richer in dioxide. Later (Feb. 23) he announces that the compressibility of a mixture of air and from 16 to 31 per cent. of hydrogen lies (for pressures near 100 centimetres of mercury) between these of the two gases, but with larger proportions of hydrogen

and higher pressures the mixture becomes less compressible than hydrogen itself. E. H. Amagat (ibid. Dec. 8, 1890) has studied the compression and expansion of liquids and gases by a new method. He finds that between 0° and 200° C. and between 100 and 1,000 atmospheres the coefficient of expansion of hydrogen at constant pressure diminishes with increase of pressure. With oxygen, nitrogen, and air the coefficient is a maximum at the beginning. At constant volume $\frac{d p}{d t}$ is always greater from 0°

to 100° than from 100° to 200°. The following results are for temperatures between 0° and 100° and a pressure of 500 atmospheres:

Oxygen.....	3.698	Nitrogen.....	2.971
Air.....	8.465	Hydrogen.....	1.895

Combustion under Pressure.—R. W. Wood ("American Journal of Science," June) finds that a burning jet of coal-gas is extinguished at a pressure of 23 centimetres of mercury; that is, when the velocity of the issuing gas exceeds the speed of combination for a mixture of gas and air.

Pneumatic Bridge.—This device, the invention of W. H. Shaw (London Physical Society, May 9), measures the pneumatic resistance of various orifices and changels as Wheatstone's bridge measures electrical resistance. Two arms of the bridge consist of circular holes in thin mica plates; the third arm is an aperture with a sliding shutter regulated by a screw; and the fourth is the aperture to be measured. The battery is replaced by a Bunsen burner and the galvanometer by a glass tube with a sensitive vane. By means of this apparatus it has been proved that beveling off one side of a hole in a thin plate increases its pneumatic conductivity, especially when the beveling is on the side of egress. For square-ended tubes the conductivity first increases with length and then diminishes, but a beveled mouthpiece causes this effect to disappear.

Sound. Rotation of a Vibrating Body.—If a cylindrical vibrating rod be rotated on its axis, the plane of vibration does not turn with it but remains fixed in space. But in the case of a tuning-fork the beats heard indicate that the planes turn with the fork. G. H. Bryan (Cambridge Philosophical Society, Nov. 24, 1890) shows that when a bell or other body symmetrical about an axis thus vibrates, the effect is intermediate. The nodes rotate, but with a smaller velocity than that of the body.

Intensity of Sound.—C. K. Wead ("American Journal of Science," March) notes that not the amount of energy in a vibrating body but the rate at which it is given up to the air determines the intensity. Text-books, he asserts, therefore err in stating that loudness varies with the square of the amplitude. In the same magazine for July Mr. Wead shows that no conclusions can be drawn from the loudness of the sound of organ pipes, as to the relative amplitude of vibration within. The soft Dulcinea stop takes more than half as much wind as the loud trumpet. This shows the higher efficiency of reed stops. In different pipes belonging to the same stop the consumption of wind does not at all agree with theory. For example, any note should take only

half as much wind as the one just an octave below it, but it actually requires more than this proportion. An organ pipe has 1,000 to 6,000 times the energy of a tuning-fork. One millionth of a horse-power would maintain a fork in ordinary vibration, and one tenth would enable it to be heard 200 feet.

Timbre.—Prof. Voight (Göttingen Royal Society, May, 1890) has endeavored to reconcile the results of Helmholtz and Koenig. (See "Annual Cyclopædia," 1890, pp. 712, 713).

Phonautography.—Dr. Pringsheim, of Berlin ("Naturwissenschaftliche Rundschau"), has attempted to settle by physical means the long-vexed question of the position of the French accent. Two-syllabled words were spoken by Frenchmen into a Koenig-Scott phonautograph, and the resulting curves were compared with a parallel tuning-fork curve. The result proved that the vowels were of equal length and strength, though this varied slightly with the position of the word in the sentence.

Heat. Mechanical Equivalent.—This has been redetermined by Constantin Miculesco (Paris Academy of Sciences, June 8) by a method similar to Joule's—the production of heat in a calorimeter by friction. In Joule's experiments the total work done was small, hence the determination took a long time, and various difficult corrections had to be made. Miculesco used a 1-horse-power electro-motor to supply the work, and a cylindrical calorimeter whose axis was co-incidental with that of the motor shaft. The mean of 31 accordant measurements gave 426.7 kilogrammetres as the mechanical equivalent of a calorie, or, in English units, $J = 777.7$.

Specific Heat.—Prof. Pfaundler (Vienna "Be-richte," April 9), in determining specific heats by Joule's law, obviates difference of conductivity through the liquid by using glass spirals filled with mercury placed in a Wheatstone's bridge, to control the ratio of resistance during the flowing of the current. Prof. W. Ramsay and E. P. Perman (London Royal Society), in experiments on the specific heat of ether, conclude that, either at constant volume or at constant pressure, it decreases to a limiting value as the temperature rises, and then increases; and that the smaller the volume the more rapid the change.

Fusion and Solidification.—Person concluded that the heat of fusion of all bodies becomes *nil* at -160° . But Prof. S. U. Pickering (London Royal Society Dec. 11, 1890) notes that Person determined heat capacities in the liquid and solid state at any convenient temperature, whereas they depend largely on the temperature. Pickering finds the temperatures of recrystallization of four substances as follow, thus disproving Person's law:

Sulphuric acid.....	-360°
Monohydrated sulphuric acid.....	-177°
Hydrated calcium nitrate.....	-234°
Naphthalene.....	-214°

In examining benzine it was found that the heat capacity of the solid was greater than that of the liquid. This phenomenon is due probably to incipient fusion below the temperature of true fusion. Carl Barus ("American Journal of Science," August) discards optical and other methods for obtaining fusion points, and employs

volume changes as his criteria. He concludes that if, under proper thermometric conditions, pressure alone can solidify a liquid, it can also, under proper solutational conditions, induce crystallization or deposition of the dissolved solid. R. W. Wood, Jr. ("American Journal of Science," January), found, on compressing ice by a pressure of $4\frac{1}{2}$ atmospheres, that a small cylinder of clear ice spurted from an aperture, as in former similar experiments. In a vessel with no aperture ice was subjected to a pressure of 20 tons to the square inch without liquefying it, as proved by the position of leaden bullets in the mass. Fine jets of spray, however, issued in all directions. He therefore questions any theory that supposes a glacier to float, as it were, on a layer of pressure-water.

Recalcescence ("Annual Cyclopædia," 1889, p. 694).—F. J. Smith ("Philosophical Magazine," May) describes some new methods of investigating recalcescence points in steel and iron. His experiments show that the change of form in the metal occurs simultaneously with its change of temperature. By fastening the wire under observation to a sort of mechanical telephone with mica disk, a sharp, crackling sound was heard at the recalcescence points. Placing the wire in a magnetic field did not affect any of the results.

Thermal Properties of Hard Rubber.—This substance has been known for some time to possess a large co-efficient of expansion and remarkable diathermanity. Prof. A. M. Mayer ("American Journal of Science," January) has investigated both properties minutely. He finds that between 0° and 18° C. the linear expansion coefficient is .0000636, and that the cubical expansion formula is $V_t = V_0(1 + .000182t + .00000025t^2)$. A plate $\frac{1}{2}$ millimetre thick transmits 32 per cent. of the incident heat from a Locatelli lamp, and 24 per cent. of solar heat. The index of refraction is 1.568—nearly as great as that of flint glass.

Very Low Temperatures.—Prof. Pictet, of Geneva, has established at Berlin what he calls a "*laboratoire à basses températures*," where special refrigerating machinery keeps objects for any length of time at any desired temperature between -20° and -200° C. The purpose of the laboratory is commercial, and it has chiefly been occupied in the purification, by crystallization, of glycerin, chloroform, ether, and alcoholic liquors, but in these processes many surprising scientific facts have already been brought to light. For instance, it has been shown that so-called "non-conducting" material does not much affect the passage of heat into a body below -100° C. In Prof. Pictet's words ("Nature," Nov. 12): "The slow oscillations of matter, which constitute the lowest degrees of heat, pass more readily through the obstruction of a so-called non-conductor than those corresponding to a higher temperature; just as the less intense undulations of the red light are better able to penetrate clouds of dust or vapor than those of blue." A covering of cotton-wool 18 inches thick has almost no appreciable effect on the rise of temperature of a substance from -135° to -100° C. It thus becomes more difficult to withdraw heat from a body the colder it gets, and Prof. Pictet judges that the lowest

attainable cold is about -255° , 18° above absolute zero. Prof. Pictet obtains his low temperatures by evaporation in three stages. First, a mixture of liquefied sulphurous acid and carbonic acid gases produces by its evaporation a temperature of -80° . At this temperature nitrous oxide can be liquefied, and this by its evaporation produces a temperature of 155° , at which ordinary air is liquefiable. The liquefied air, in its turn, by its vaporization brings the temperature below -200° .

Light (For various experiments bearing on the electro-magnetic theory of light, see under "Electricity" and "Magnetism"). *Aberration*.—Loewy and Puiseux ("Comptes Rendus," March 16) conclude that there are errors in all previous determinations of the aberration constant. By a new method they find Struve's value ($20.445'$) to be very nearly true, and they also find that reflected and direct rays behave alike as to aberration.

Spectroscopy.—Michelson and Morley have found that interference bands obtained with the hydrogen α line disappear with a difference of path of 15,000 or 45,000 wave-lengths, and they therefore conclude that it is a close double, the components being separated by only $\frac{1}{10}$ of the distance of the sodium lines. Ebert denied the validity of their conclusions, and Lord Rayleigh criticised Ebert's assertions. Ebert now ("Annalen der Physik und Chemie," viii, 1891) claims to have established that the observed phenomena are not connected with duplicity but rather with the intensity of the light. G. Johnstone Stoney (Dublin Royal Society, March 18) has mathematically examined the cause of double lines in the spectra of gases. On the dynamical theory, apsidal motion (in its own plane) of the ellipse of vibration of a molecule would give rise to a pair of lines, and motion of the nodes would have the same result. Such motions may perhaps be ascribed, on the electro-magnetic theory, to the reaction of electric displacements caused by the oscillation of permanent electric charges. Hüfner and Albrecht (Wiedemann's "Annalen," March) find that the absorption of light by water is greater the longer the wave-length. But the curve of transmission is not regular, showing sudden rises in the regions of the *D* and *G* lines. Olszewski (Cracow Academy of Sciences, January) has made important observations on the spectrum of liquid oxygen. This had previously been considered colorless, but by using a layer 30 millimetres thick he found it to be a bright sky-blue. A layer 7 millimetres thick showed absorption bands in the orange-yellow; one of 12 millimetres showed three in the green and blue, and the 30-millimetres layer showed a fifth in the red (Fraunhofer's A). He concludes that the blue of the sky is due to the oxygen of the air, confirming the opinion of Egoroff and Janssen. Sir John Conroy (London Physical Society, Feb. 18) has found that the absorption spectrum of cobalt glass varies with temperature. Similar changes in solutions may be ascribed to the formation of hydrates or by partial dissociation, but neither of these explanations holds for a solid. H. Rigollot (Paris Academy of Sciences, Jan. 5), in experiments on the absorption spectrum of iodine, concludes that with an increase

of molecular weight of the solvent the absorption band is shifted to the violet end, and the minimum amount of light received diminishes in value. A. Cornu (Paris Academy of Sciences, Dec. 22) deduces from photographs of spectra by Dr. O. Simony the following facts concerning the influence of the atmosphere on the ultra-violet solar spectrum:

LOCALITY.	Altitude in meters.	Wave-length of last trace of spectrum.	Wave-length of the beginning of the end.
Teneriffe	3,700	282.2	268.7
Courtenay	170	284.8	298

Polarization.—Wiener (Wiedemann's "Annalen," xl, 203, 1890) allowed a wide beam of polarized light to fall on a reflecting surface at an angle of 45° , so that the reflected ray cuts the incident at a right angle. If there is interference here, the direction of vibration of the polarized light must be normal to the plane of polarization and perpendicular to the direction of propagation. By using a thin photographic pellicle he proves the existence of interference fringes, and his results thus support the generally received theory of polarization. Dr. Poek (Berlin "Berichte," February), assuming that the carbon molecule is tetrahedral, shows that the different effects of its apex and base on light will account for the greater strength of one circularly polarized ray in certain solutions, which is generally considered to be the cause of their power to rotate the plane of polarization of a light beam.

Phosphorescence.—E. Wiedemann (*Beiblätter* to Wiedemann's "Annalen," iv, 1891) concludes, from experiments on Balmain's luminous paint, that matter that emits more light than heat is not necessarily the cheapest source of light. In order to establish the contrary, account must be taken of the entire transformation of the energy of the light in the process of using it. His results are opposed to those of Langley ("Annual Cyclopaedia," 1890, p. 714). On the other hand, Prof. William Crookes, in an address before the Institution of Electrical Engineers (Nov. 13), noted that the researches of Hertz and Lodge have "unfolded to us a new and astonishing universe." The wave-lengths of electric rays are constantly being reduced by experiment, and could we construct Leyden jars of molecular dimensions, the rays might fall within the narrow limits of visibility. Prof. Crookes thinks that the phosphorescence of the rare earths by electricity may be actually an artificial production of these short electric rays, and that if it could be produced more easily and more regularly, as in the glow-worm and firefly, it would be far more economical than any light we know. Henri Becquerel (Paris Academy, March 16), using his father's well-known phosphorescope to examine the spectra of various phosphorescent minerals, finds that in chlorophane the spectrum varies with the velocity of rotation of the instrument. He concludes that this is due to the presence of different substances that form definite compounds under certain conditions of illumination and temperature. M. Becquerel has also (*ibid.*, Nov. 9) developed formulæ for the relation between the intensities

of light emitted by phosphorescent bodies and the duration of illumination. The results agree very closely with his father's experiments.

Intensity.—Dr. A. Richardson ("Philosophical Magazine," September) has devised a new method of measuring the intensity of rays of high refrangibility. It depends on the sensitiveness of chlorine to light.

Photography.—Lord Rayleigh ("Philosophical Magazine," February) finds that a pin-hole may replace a lens under certain conditions, but to obtain the definition of a lens of four-inch aperture, a focal distance of five miles would be necessary.

Stereoscopy.—C. J. Woodward exhibited to the London Physical Society, on May 22, Dr. Schobben's lantern stereoscope. The two pictures are superposed on the screen, red glass being placed in front of one lantern lens and green in front of the other. The spectators wear spectacles with one green and one red glass. Each eye, therefore, selects its own picture, and the usual stereoscopic effect results.

Liquoscope.—M. Sonden, of Stockholm ("Nature," Sept. 17), has devised what he calls a "liquoscope" for optical comparison of transparent liquids. Two hollow prisms holding the liquids are separated by a partition at right angles to the refracting edge, and are placed in a vessel of glycerin with plane parallel glass sides. The deflection of the rays through the prisms is thus compensated. A straight mark viewed through the instrument appears as two disconnected halves, the relative displacement of which gives a measure of the difference of the refractive powers of the two liquids.

Electricity. Its Velocity.—The velocity of an electric disturbance through a wire, as found by Wheatstone, was half as great again as that found by Kirchhoff. It has been proved by I. Stefan (Vienna "Berichte," April 23) that the discrepancy is due to the fact that Wheatstone used a coiled wire. Stefan compared by Hertz's method the waves in a straight wire with those in a coil like that of Wheatstone, and found a similar difference in velocity.

Electric Waves. (See "Annual Cyclopædia," 1889, p. 694; 1890, p. 715).—Prof. Lodge ("Nature," July 16) objects to the expression "electric resonance" (used of responsiveness to electric radiation), as not conveying an exact meaning. Dr. Arthur Myers suggests "syntony" (Greek *σύντονος*), with its derivatives "syntonize" and "syntonic." "Symphonic" has also been suggested, but is objectionable, as it has already a different meaning. Prof. Lodge (London Physical Society, June 11) has yet found in insulators no trace of opacity to electro-magnetic radiation, but the thinnest film of metal is quite opaque. Even cardboard rubbed with graphite is a complete screen. He has devised what he calls a "graduated electric eye," or "harp," consisting of strips of tinfoil of different lengths, which is sensitive to a wide range of radiation. Prof. Lodge considers that the opacity of ebonite (the most conspicuous exception to the rule that insulators are transparent) is due to internal reflections, like that of ground glass. Prof. Klemencic (Vienna "Berichte," Feb. 19), in experiments on the reflection of electro-magnetic waves from plates of metal and sulphur, finds

that the results in general agree with Fresnel's formulæ for intensity, but that there are some noteworthy exceptions, probably due to the large size of the ray compared to that of the plate. F. T. Trouton ("Philosophical Magazine," July) finds that as the reflector is smaller the distance of the node becomes greater, and that the distance also varies according as the long dimension of the mirror is parallel to the magnetic or to the electric component of the wave. He considers this due to the fact that the beam rapidly decreases in intensity as it leaves the mirror. F. Von Dobrzynski claims to have photographed electro-magnetic waves in air, the time of exposure being three hours. He concludes that waves of from 0.6 to 20 centimetres in length are photographically effective. Electric waves in conductors also have been further investigated. E. Sarasin and L. de la Rive (Paris Academy of Sciences, March 31) conclude that the velocity of such waves is sensibly the same as in air. A. Elsass ("Annales de Physique," Nov. 12, 1890) detects waves on a wire in open circuit by hanging a telephone on it at successive points. The source of electricity was a single Daniell cell. Prof. Lodge (London Physical Society, June 12), in experiments on "resonant Leyden jars," the discharge of one of which precipitated that of others, "timed" wires to respond to the oscillatory discharge of the jars. When a thin wire was connected to the knob of a jar and a parallel wire was joined to the outer coating, the points of greatest vibration in the wires were plainly shown by a glow. The identity of electro-magnetic radiation with light has received new confirmation in the experiments of L. Arons and H. Reubens, who find that Maxwell's relation, $n^2 = \mu$, holds for four fluids (n being the ratio of the velocity of the wave *in vacuo* to that in the given substance, and μ being its dielectric constant). This relation is a consequence of the electro-magnetic theory of light. C. V. Boys has continued his trials to make an electric-radiation meter ("Annual Cyclopædia," 1890, p. 716). With the aid of Prof. Fitzgerald ("Philosophical Magazine," January) he showed that the heating of a wire exposed to the radiation was equal to that caused by the current from one Daniell cell through an external resistance of 115 ohms and a working resistance of 38 ohms, or about .01 of an ampère. Hertz himself ("Lumière Electrique," March 28) has studied the mechanical action of his waves, the electric force being measured by a cylinder of gilt paper, and the magnetic force of a circular ring of aluminum wire. He concludes that the magnetic and electric vibrations are at right angles, and that the nodes of each coincide with the antinodes of the other.

Photo-electricity.—Prof. G. M. Minchin (London Physical Society, Jan. 16) has explained at length the construction of his photo-electric cells ("Annual Cyclopædia," 1890, p. 717). In unsuccessful efforts to photograph distant objects, he discovered that an electric current is produced by the action of light on silver plates coated with a collodion or gelatin emulsion of a haloid silver salt, or with certain aniline dyes, when immersed in a liquid, one plate only being illuminated. The electromotive force was rarely greater than one twentieth of a volt. Uncleaned

tinfoil plates in water produced a like effect, tinfoil from tobacco packages being very sensitive. The best plates, however, were made by coating tinfoil with white oxide of tin. Alcohols were found to be the best liquids. A discussion as to these cells took place in the London Physical Society on Feb. 13. In answer to a question as to the source of their energy, Prof. Minchin replied that there is a direct transformation of the light energy without chemical change.

Electromotive Force.—A. Oberbeck and J. Edler (Wiedemann's "Annalen," xlii, 2) conclude, from experiments on the electromotive force of galvanic elements, that the force can be calculated from the heat equivalent of the chemical process, taking into consideration the local evolution of heat at the electrodes. Want of constancy they think due to taking up of molecular layers of a dilute solution of the metal of the electrode. G. J. Burch and V. H. Veley (London Royal Society, Nov. 27) have investigated the variation of the electromotive force of cells made up of certain metals with platinum and nitric acid. With copper, silver, bismuth, or mercury the electromotive force rises to a constant value, which is generally a maximum. This is due to decomposition of the acid to form nitrous acid; for if nitrous acid be added, the maximum is attained at once, and if some substance is added to neutralize the nitrous acid, the rise is extremely slow. Dr. G. Gore ("Philosophical Magazine," July) finds that great changes of voltaic energy take place during the melting of alloys, the most sudden effect being with those that exhibit the most sudden liquefaction. This fact may be used to detect physical and chemical changes in alloys.

Conductivity.—E. Brauly ("La Lumière Electrique," May 16) has studied the phenomenon of variation of conductivity in powders. It has long been known that pressure diminishes their resistance. Brauly finds that it is lessened also by a Leyden-jar discharge in the vicinity, by the proximity of a conductor traversed by a condenser discharge, and by induced currents, or continuous currents of high electromotive force, passed directly through the powdered substance. Some powders—for instance, a mixture of sulphur and aluminum—require both pressure and electric influence. In further experiments (Paris Academy of Sciences, Nov. 24) he finds that in a circuit composed of a Daniell cell, a high-resistance galvanometer, and a thin film of copper 7×2 centimetres on ground glass or ebonite, only an insignificant current passes; but if a discharge from a Wimshurst machine or a Ruhmkorff coil takes place in the neighborhood, even at a distance of several metres, there is a sudden diminution of resistance. N. G. Klassen (Cambridge Philosophical Society, Jan. 26) finds that the electric resistance of a sulphuric acid solution varies nearly with the viscosity, attaining a maximum at a dilution corresponding to the hydrate $H_2SO_4 \cdot H_2O$, but the analogy diminishes with the rise of temperature, probably on account of dissociation of the hydrate. Shelford Bidwell (London Physical Society, Dec. 6, 1890) has succeeded in utilizing the well-known sensitiveness of selenium to light in the construction of an automatic electric lamp, which lights itself at twilight or whenever the room is darkened.

Prof. W. E. Ayrton and T. Mather (*ibid.*, June 26) have devised several forms of non-inductive resistance. One consists of strips of thin sheet platinum, 6 metres by 4 centimetres, each doubled backward on itself, with silk between the two portions. Twelve of these in series had a resistance of 2.95 ohms, and would carry a current of 15 ampères without a change of more than 0.1 per cent.

Electrolysis.—Ostwald ("Journal of the Chemical Society," December, 1890) has investigated the electric properties of semi-permeable walls. This property of a wall depends on its ability to let through the separate ions of an electrolyte. If a solution whose ions can not pass be electrolyzed, the wall will act like a metallic electrode. Svante Arrhenius (Wiedemann's "Annalen," xlii, 18) reverses the methods of Van't Hoff by arguing from the electrolytic properties of a dilute solution to those of a gas. He investigates the conduction of electricity by the vapor of heated salts, and finds their behavior analogous to that of solutions of the same salts.

M. Chabry, of the French Société de Biologie, has succeeded in producing a pressure of 1,200 atmospheres by electrolytic generation of gas in a closed space. The liquid was a 25-per-cent. soda solution. Both electrodes were of iron; one was the hollow sphere in which the gas was collected, the other was an inner tube. The current had a strength of $1\frac{1}{2}$ ampères. The highest pressure previously produced by this method was 447 atmospheres (Gassiot).

Electric Evaporation.—Prof. William Crookes (London Royal Society, June 11) gives this name to the phenomenon discovered in 1877 by Prof. Arthur W. Wright, of Yale, namely, that a stream of metallic molecules passes from one electrode to another when the electric discharge passes through a vacuum, and that a metallic deposit can be made on an interposed sheet of glass. This process has been used for silvering mirrors and for obtaining thin metal films, but Prof. Crookes is the first to investigate it exhaustively. He finds that it is similar to ordinary heat evaporation, the presence of air lessening it as it lessens common evaporation, but in a greater degree. The following table shows evaporation from cadmium electrodes in 30 minutes:

CONDITIONS.	Positive pole.	Negative pole.
	Grains.	Grains.
Original weight.....	9.34	9.38
Weight at end of experiment.....	9.25	1.86
Amount volatilized.....	0.09	7.52

In a few hours 350 grains of the metal were evaporated. From silver electrodes in an hour and a half 0.01 grain and 0.19 grain were volatilized. With the purple gold-aluminum alloy discussed by Prof. Roberts-Austen, the gold evaporated first, leaving the other metal.

The comparative electric volatilities of metals, calling that of gold 100, are as follow:

Palladium.....	108	Platinum.....	44
Gold.....	100	Copper.....	40.24
Silver.....	82.68	Cadmium.....	81.99
Lead.....	75.44	Nickel.....	10.99
Tin.....	56.96	Iridium.....	10.40
Brass.....	51.89	Iron.....	5.50

The above results are for equal surfaces. The volatilities for equal weights, obtained by dividing by the specific gravities, are as follow:

Palladium.....	9	Copper.....	2.52
Silver.....	7.88	Platinum.....	2.02
Tin.....	7.76	Nickel.....	1.29
Lead.....	6.61	Iron.....	0.71
Gold.....	5.18	Iridium.....	0.47
Cadmium.....	8.72		

The order of electric volatilities does not correspond to that of melting points or of any other known constants. By the method of electric evaporation and condensation, Prof. Crookes obtained films of gold and silver that could be removed in the form of brilliant foil.

Inductive Discharge through Gases.—Prof. J. J. Thomson (London Physical Society, May 9) finds that the electric discharge in rarefied gas is greatly simplified when there are no electrodes. He passes a Leyden-jar discharge through a tube of mercury wound spirally around a gas tube, thus electrifying the latter by induction, and finds that the "dark space" and the striae are absent. The conductivity of the gas tube increases as the pressure diminishes up to a certain point and then diminishes, proving that the high resistance of a nearly perfect vacuum is not due to the presence of electrodes. A fine wire in the tube on the side opposite to the primary circuit prevents luminous discharge. These experiments lead Prof. Thomson to conclude ("Philosophical Magazine," October) that the distinction between electrostatic and electromagnetic induction is to be made only for convenience. The same phenomena that would be considered electrostatic in a tube with free ends would be called electromagnetic in an endless tube. Nikola Tesla ("Electric Engineer," New York, July 1) has made similar experiments by inserting in an ordinary incandescent lamp bulb a tube containing a roll of copper foil, through which the jar discharge is passed. He concludes that the effect is purely electrostatic. By so directing the discharge as to exalt the electrostatic effect, he produced light in a bulb several feet distant from the primary, and has shown it to be possible thus to construct an electric lamp without visible connections that will be luminous in whatever part of a room it may stand.

The Electric Arc.—According to Elihu Thompson ("Electric World," Feb. 28), this has not received the study that it merits. He thinks that the carbon is actually vaporized by the current in the arc (see also *Electric Evaporation* above), a coherent deposit being obtainable from it. In long arcs there is an outer zone of true combustion. The carbons in an electric arc light become plastic, as can be shown by taking an impression. The real work of the arc, as shown by difference of potential, is in vaporizing the carbon in the "crater" of the positive pole. Photographs by J. C. McMyynn, described by E. L. Nichols in "The Electrician" (June 5), show that the humming of an alternating current arc is similar to that of a singing flame, the arc being rapidly extinguished and relighted. They show also an oscillation of the arc from right to left, due to the influence of the earth's magnetism. In an earlier article ("American Journal of Science," January) Mr. Nichols noted that when the terminals of the secondary

coil of an alternate-current transformer are armed with a ball and a point, when the distance is such as to admit of a discharge between them, a shunt galvanometer shows a considerable continuous current from ball to point. F. C. Caldwell finds that the discharge when the ball is positive, leaves perpendicularly to the surface, and when the point is positive it leaves the apex and reaches the ball obliquely.

High-pressure Phenomena.—Recent experiments have been made in Frankfort, Germany, and in London, with alternating currents of the enormous potential of 45,000 volts. When the electrodes were placed several inches apart and a thick sheet of glass was inserted between them, the discharge appeared like a true flame, darting toward the glass and licking it with interlacing tongues of fire. As the pressure increased the flame flowed around the edges, and the glass was finally shattered.

Point Discharge.—A. P. Chattock ("Philosophical Magazine," September) says that where electrified steel needle-points are discharged in air the smooth, curved apex of the point is studied with chains of air molecules (known as "Grotthus chains") standing up like bristles. External pressure varies the length and closeness of the chains, and affects the discharge.

Electricity from Carbon Dioxide.—Dr. Haussknecht (Berlin "Berichte," May) notices interesting electric phenomena accompanying the manufacture of solid carbon dioxide on a large scale. The liquid gas is allowed to escape into sail cloth or canvas bags. In the dark these appear illuminated by a pale greenish-violet light, and sparks from 10 to 20 centimetres long dart from the cloth. The phenomena seem to be analogous to those of hydro-electricity, and to be due to the friction of the gas and spray on the pores of the cloth.

Dielectrics.—E. Bouty (Paris Academy of Sciences, April 27) finds that mica behaves as an invariable dielectric in a direction normal to the planes of cleavage. Between 0° and 300° C. the dielectric constant does not alter by $\frac{1}{10}$. It is possible that between 300° and 400° C. mica may possess some specific conductivity, but it is negligible for charges of brief duration. The large variations of mica condensers with the duration of charge he finds to be due to electrolysis of foreign bodies in the superficial layer.

Photography by Electric Spark.—Lord Rayleigh, in a lecture before the Royal Institution (Feb. 6), exhibited spark photographs of bubbles of a gas rising within a liquid and breaking the surface into spray; of jet phenomena; and of the breaking of a soap film. The success of these pictures depended on a delicate electromagnetic adjustment which determined the production of the spark at the desired moment.

Apparatus for Measurement.—Max Wien ("Annalen der Physik und Chemie," iv) uses a telephone to measure electric currents, the diaphragm being replaced by a thin metal plate, like that of an aneroid barometer, which is connected by levers to a mirror. A reflected beam of light serves as an index. C. V. Boys (London Physical Society, June 26) has devised a pocket electrometer, using his quartz fibers for suspension. The advantage of a small instrument is that it can be made 10,000 times as sensitive as a large

one. Boys's electrometer has a disk that weighs but $\frac{1}{10}$ of a gramme. W. E. Ayrton, J. Perry, and W. E. Sumpter (London Royal Society, June 4) find that the ordinary quadrant electrometer does not even approximately obey the usually assumed law when the potential of the needle is altered. This is due to electric action between the guard tube and needle and to the tilting of the needle at high potential. They have altered the construction of the instrument so as to eliminate this source of error.

Lightning and Lightning-Rods.—N. D. C. Hodges (Institute of Electrical Engineers, April 21) has noticed that in all recorded cases of lightning stroke the dissipation of a small conductor (say $\frac{1}{8}$ of an inch in diameter) has always protected surrounding objects between two horizontal planes passing through its upper and lower ends. A query inserted in "Science" weekly since June 19 had elicited no exception to this law by Jan. 1. To apply it practically Mr. Hodges has devised what he names a "lightning dispeller," consisting of a thin, easily volatilized conductor, that is intended to convert the electric energy at once into a harmless form. In opposition to his views, Prof. Elihu Thompson ("Electric World," New York, June 27) claims that this invention rests on a fallacy, since the inventor seems to suppose that overcoming the resistance of the conductor is the only work done by the flash, whereas this work is only a minute fraction of the whole amount. The practical experience of several years is necessary fully to decide on the value of the dispeller. Prof. Thompson (*ibid.*) asserts that not all lightning is oscillatory (see "Annual Cyclopædia," 1889, p. 699). A discharge that passes over a great length of cloud he says takes some time to do so.

Magnetism. Its Nature.—Prof. J. A. Ewing, by further advances in the direction noticed last year ("Annual Cyclopædia," 1890, p. 719), has thrown most important light on the molecular processes of magnetization. His theory, which is popularly set forth in a Royal Institution lecture (May 22), is an extension of the generally accepted one (Weber's), that magnetization imparts no new qualities to the molecules of a substance, but simply reveals their magnetism (which had been ineffective because their axes had all possible directions) by bringing them more and more into parallelism. Ewing represents the magnetic molecules by small magnetic needles, free to turn on pivots, and studies their behavior when they are subjected to the influence of an electric current in a surrounding copper coil. When there is no current through the coil, the magnets arrange themselves in stable groups. A feeble current turns each slightly, but all return to their original positions when it ceases. As the current grows stronger, some of the less stable groups suddenly assume new positions of equilibrium, in which their axes are more nearly parallel to the magnetizing force, and others follow, till finally with a very strong current all the groups break up and new ones are formed. A large proportion of the magnets, in this case, will not go back to their old positions when the current is stopped. A still stronger current of course alters their direction little, as they are now nearly parallel. The slow movement of the needles at first, their wavering as the point

of instability is reached, and their sudden swinging into their new positions, are very striking. Their behavior thus explains exactly why, as the external force steadily increases, the magnetization of a metal first increases slowly, then rises rapidly, and then increases slowly again, till finally a large additional force produces almost no change at all. It also explains the phenomenon of retentiveness, which on this theory seems due to the assumption by the molecules of new permanent configurations. Hysteresis (see "Annual Cyclopædia," 1889, p. 702), which Ewing defines as "the tendency of the changes of magnetism to lag behind changes in the magnetizing force," comes in, on his theory, whatever may be the cause of the change, whenever it involves such deflections of the molecules as to make them unstable. The unstable movements are not reversible with respect to the agent that produced them; that is to say, they can not be simply undone step by step as the agent is removed. The dissipation of energy attendant upon a reversal of the magnetism of iron or steel, or upon any cyclic change in it, is explained by the fact that as a molecule "tumbles," as it were, from an unstable grouping, it oscillates, till its motion is damped by the electrical eddies that it causes. The well-known effects of vibration, tapping, or strain in facilitating magnetization also follow directly from the new theory. And since the molecules of a piece of iron wire are magnets, though there be no magnetization of the wire as a whole, its physical qualities change during loading and unloading in a manner involving hysteresis. The theory also throws light on the "time lag" of magnetization, which it shows to be due to the way in which one molecular group after another breaks up. The sudden loss of magnetism when a metal becomes red-hot, Ewing suggests is due to the fact that the molecular vibration may be then so violent as to set the molecules spinning, thus masking their polarity. Arthur Hoopes ("Electric World," New York, May 16) has drawn curves representing the magnetic susceptibility of a Ewing's model, and they correspond remarkably with those obtained for actual metals. Prof. S. P. Thompson (London Physical Society, Nov. 28, 1890), in illustrating Ewing's theory with small charm compasses, found that with small openly spaced magnets a weak external force was comparatively effective, and he thinks this may throw light on the molecular groupings of the loadstone, the crystalline variety of which has little or no magnetic susceptibility, while the heterogeneous variety has a great deal.

Magnetism and Strain.—Prof. C. G. Knott (Edinburgh Royal Society, June 1) has investigated some relations between magnetism and twist in iron, nickel, and cobalt. A rectangular rod of nickel or cobalt twists left-handedly when a current is passed along it in the direction of magnetization, while iron twists right-handedly, unless strong fields are used. He observed effects, when an apparently demagnetized wire was subjected to twist, that suggested that a magnetized wire may, in certain circumstances, consist of alternate layers of opposite polarities. From his own experiments and those of others, he concludes that the first effect of a shearing stress on molecular groupings is not only to

increase the average intensity in the direction of the magnetizing force, but also to bring into prominence a relatively high intensity in directions at right angles to it.

Distribution of Magnetism.—This has usually been tested by rods, ellipses, or spheres applied to the magnetic body, but these alter the very thing they are designed to measure. Prof. S. P. Thompson (London Physical Society, March 10) uses a flat coil and a galvanometer. His results show that the perturbations caused by the so-called "proof pieces" are very large, sometimes the perturbed field about the point of contact being from four to six times as great as the unperturbed field.

Propagation of Induced Magnetism in Iron.—To ascertain the rate at which this takes place, Fred. T. Trouton ("Nature," Nov. 12) passed an alternating current through a coil placed radially around a ring of soft iron, supposing that the interference of the magnetic waves thus produced would cause magnetic nodes in the ring. These nodes he tried to detect by a shifting coil attached to a telephone. Nodes were at once observed, but they were not due to interference, for the distance between them was unaffected by a change in the rate of alternation of the current. The effects on opposite sides of the same node, however, were of opposite phase, just as if interference had been the cause; but, notwithstanding this, the currents induced on either side of a node are not of opposite sign. Mr. Trouton concludes that the phenomenon depends on some permanent peculiarity, round the ring, that happens to occur regularly; but what this is or how it is caused is yet unknown.

Magnetism and Light.—A. B. Basset (London Royal Society, Jan. 8) has endeavored to explain Kerr's phenomenon (the rotation of the plane of polarization of a ray of polarized light by reflection from the polished end of a magnetic substance) by considerations based on the electro-magnetic theory of light. In metals the phenomenon is complicated by the difficult one of metallic reflection, but it is shown also by some non-metallic magnetic substances, such as solutions of certain chemical compounds of iron, and he devotes his attention to these. His explanation is developed mathematically from Rowland's assumption that Hall's effect (the production of a cross electromotive force by the passage of a current through a conductor in a magnetic field) holds good in a dielectric. The results agree pretty well with experiment but not entirely.

Position of Virtual Poles.—Thomas H. Blakesley (London Physical Society, Nov. 28, 1890) discusses the problem, "given the two virtual poles of a magnet and a straight line intersecting at right angles its axis produced, to determine at what point this line is parallel to the field." The mathematical solution is of scientific interest, because this point can be experimentally determined and the distance of the virtual poles can then be calculated. Blakesley's geometrical solution and his resulting formula are given in "Nature," Dec. 25, 1890.

Change of Form affecting a Magnetic Field.—Prof. A. E. Dolbear, from experiments on a flexible magnetic ring, (American Academy of Sciences, Boston, Jan. 14), comes to the following conclusions:

1. A change in the form of a magnet causes corresponding change of stress in the field.

2. Periodic changes in form due to elasticity of form, such as are called sound vibrations, set up similar periodic changes or waves in the magnetic field.

3. Such vibrations set up in other magnets similar vibrations, either sympathetic or forced.

4. These vibrations of the receiving magnet change its field, setting up electric currents in surrounding circuits.

Prof. Dolbear suggests that all atoms are magnets, so that their vibration must set up electro-magnetic ether waves. A ring magnet is the most perfect form possible, and thus Sir William Thomson's vortex atom theory at once suggests itself to the mind.

Magnetism and Electrical Oscillations.—Contrary to general belief, Prof. John Trowbridge shows ("American Journal of Sciences," September) that (1) the magnetic permeability of iron wires exercises an important influence on the decay of electric oscillations of high frequency; (2) probably the time of oscillation in iron wires may be changed; and (3) therefore a current of high frequency—a Leyden-jar discharge, for instance—magnetizes the iron.

Magnetic Force due to Steady Currents.—Dr. Schuster ("Philosophical Magazine," July) shows that this can always be expressed in terms of the value of the current at the surface of the conductor: the current within may be unknown, though, of course, it is determined by that on the surface.

The Earth's Magnetism.—Prof. F. H. Bigelow ("American Journal of Science," September) thinks that the permanent magnetism of the earth may be principally due to its orbital motion through the radiant field of sunlight. The rotation of the earth on its axis introduces a modification, and may result in a rotation of the axis of polarization about the axis of figure; or, if the magnetization has already become set in the earth, may cause a succession of secular waves to sweep over it from east to west, as shown in the history of the isogonic lines.

Diamagnetism.—J. Parker ("Philosophical Magazine," August and September) thinks that the theory of diamagnetic polarity is as absurd as it would be to claim that the ascent of a balloon is due to "diagravitation." He develops mathematically the theory that diamagnetic effects are really due to the magnetic pressure of the surrounding medium. To those objectors who assert that in this case we must ascribe magnetic qualities to a vacuum, since diamagnetic phenomena occur in an exhausted receiver, he replies that we can not obtain a perfect vacuum, and that the residual gas in the best vacuum we can get is quite sufficient to account for the observed facts.

PHYSIOLOGY. The physiological researches of the year 1891 have not been marked by any new or striking discoveries, but have indicated a steady advance all along the line. Heidenhain's work on lymph has resulted in showing that the absorption of products of digestion is not merely osmosis; that the exudation of lymph can not be explained simply as due to diffusion under pressure, but is dependent on the secretory activity of the endothelial cells in the capillary

walls. A distinction which he marks between blood lymph and tissue lymph affords a new view in contrast to that which regards all kinds of lymph as exudations of blood-plasma. The great importance of the part played by calcium salts in the processes of coagulation has been set forth by the careful researches of Ruge, Wright, and Sainsbury in England, and Arthus and Pagès in France. In the physiology of the nervous system, Ramon y Cajal and Kölliker have more fully demonstrated the non-continuity of sensory nerve fibers with nerve cells. According to their researches, nervous impulses pass by mere contact rather than through anatomically continuous channels to the cells. Nothing definite is yet advanced in regard to the true explanation of the connection between pancreatic disease or extirpation and diabetes. The pancreas appears to have other functions than that of a manufactory of pancreatic juice; and the kidney seems to have other uses than the secretion of urine, and to play some important part in the metabolic cycle.

Circulation.—The investigations of Hayercraft on the cause of the first sound of the heart-beat present results favoring the supposition that it is valvular or has a valvular element. While admitting that the contracting ventricle may produce a sound, the author maintains that it is a resonance sound. The heart-sounds appear to be higher in pitch than the sounds produced by contracting skeletal muscles, or by the muscular tissue of the pulsating but bloodless heart itself. The two heart-sounds were found to vary somewhat in pitch even in the same species, but to be always in the bass clef, and separated by a minor third, or by an impure minor third, from one another. Upon the whole question, the author concludes that the first heart-sound is "an impure musical note, a minor third below the second sound, and in the bass clef. It is a valvular sound, like the second sound. It is accompanied by resonance tones of the chest, the stethoscope, and the ear, these tones being produced by the shock of the contracting heart. In addition to this, it is of course possible that there may be concomitant sounds produced by the rushing of the blood and other minor disturbances."

It has been found by H. N. Martin that while the isolated heart of the cat may be cooled down to a temperature of 16.5° C., and yet not be killed if soon warmed again, it usually dies at about 17° or 18° C. The cooling is accompanied by a slowing of the pulse. When the temperature is slowly and gradually raised, the lethal or maximum temperature is found to lie usually between 44.5° and 45° C. Before this is reached, an optimum temperature is passed at about 41.3° C., at which the beat is quickest, although it may not be the temperature for doing the most work. By care it is possible to adapt the heart to higher temperatures. If the blood be cooled somewhat, as soon as the heart shows any signs of weakness the temperature may then be often raised to a still higher point without causing any weakening of the heart; and in this way we may raise both the maximum and the optimum temperatures.

From their studies on the coagulation of the blood and its dependence on calcium salts, Ar-

thus and Pagès have found that coagulation may be prevented by the addition of oxalates, fluorides, or soaps; that as this procedure may arrest an impending coagulation or interrupt one already begun, it is inferred that the salts do not prevent the formation of the ferment; that the action is due to a decalcification, or, in other words, the presence of soluble calcium compounds is essential to coagulation, and anything which removes them hinders that process. The calcium salts may be replaced by those of strontium, but not by salts of barium or magnesium; that fibrin is a calcium compound; and that the process is not a transformation of the fibrinogen into a substance capable of uniting with calcium salts to form an insoluble compound, for the coagulation is not instantaneous.

The experiments of L. E. Shore on the effect of peptone on the clotting of blood and lymph lead to results opposed to the conclusions of Fano, that, as far as the clotting power is concerned, lymph always goes hand in hand with the blood, and to his deduction from this, that the lymph is completely dependent on the blood, and produced from it by a physical diffusion. Mr. Shore records experiments in which he obtained a condition when blood clotted normally, and lymph did not.

Concerning the character of the blood-flow into the heart during diastole, H. N. Martin has found that when the aspiration of the thorax has been eliminated, the right auricle of the mammalian heart will not receive blood unless it is supplied by a decided, if small, positive pressure. Such suction-pump action as may be exerted by the heart in the closed thoracic cavity is not due directly to its active expanding force, but is the secondary result of the pneumatic conditions prevailing within the cavity. Any cause diminishing thoracic aspiration must therefore hinder the work of the heart; and it is probably more in this manner that the circulation is impeded in certain cases of hydro- or pneumo-thorax than by direct pressure exerted upon the heart itself.

Microscopical examinations by MM. Locuy and Puiseux of preparations of peritoneal serum showed the presence of red globules of blood (hæmatics), whatever precautions were taken. The globules are therefore regarded as a normal element, physiological, not accidental, of the serum. Colorless spherical lymphatic cells, having dimensions from 20 μ to 100 μ , are also described in the authors' paper. The volume, structure, and reactions of those cells from the three animals experimented upon (the domestic rabbit, the rat, and the cat) are found to vary.

S. Monekton Copeman gives as the methods with which he has been successful in demonstrating the formation of crystals of hæmoglobin in human blood: the addition to the blood of decomposing serum or pericardial fluid; treatment with bile; agitation with ether; semi-digestion in the stomach of the common leech—of which the first is the only one to be recommended as being invariably successful. Specimens made in this way appear to be permanent. Hoppe-Seyler has also obtained hæmochromogen in the crystalline form.

The principle of a new method of determining the velocity of the blood, demonstrated by Dr. G. N. Stewart, consists in impressing upon the blood

at any part of its course an alteration which will travel with the velocity of the blood stream, and be capable of easy recognition at any other part. Among the advantages of the method are, that it does not affect the vascular system except at one selected point; that the only substance introduced into the blood is a harmless salt, which is already present there, and is rapidly eliminated; that it admits of a rapid succession of observations on the same animal; that it lends itself to determining the circulation in individual organs or tissues under different conditions; and that it is specially suited for small animals.

Phosphate of lime has been found by Sidney Ringer superior in qualities to calcium chloride as an ingredient in an artificial circulating fluid. As between the various solutions named, in respect to their efficiency to sustain contractility of the heart, comparative experiments showed that saline solution is least effective; saline containing sodium carbonate is next in order; then phosphate of lime saline; and next, phosphate of lime saline containing potassium chloride. When sodium bicarbonate is added to the saline, the composition is stronger in the midwinter months. Hence lime and potash salts appear to be as necessary to the metabolism of muscle at rest as to the metabolism occurring during a muscular contraction. While the author finds that the alkaline-soda salts do not play so important a part in the production of the contractions as Biedermann supposed, both authors agree that temperature strongly influences the contractions. At a low temperature these movements become somewhat rhythmical. From comparative experiments with a number of other salts, the inference is drawn that substances of that nature in part sustain contractility by preventing or lessening the twitching of the muscles.

From experiments made to ascertain the nerve centers for respiration, Dr. Laborde found that superficial mechanical injury to the region of the *alae cineræ* does not accelerate respiration; if the injury penetrates at least to the middle of the substance, respiration may cease altogether. This result is always obtained if a certain circumscribed portion of the substance is cauterized with the hot iron. The iron must, however, enter immediately above the apex *calami*, and must penetrate at least half the substance from the raphe. If the injury is unilateral, respiration may continue for some little time on the opposite side. Total separation of the medulla below the apex *calami* always arrests respiration of the trunk, while that of the head continues for some time. Spinal reflexes continue, and even increase; irregular superficial contractions of the respiratory muscles, leading to no results, may be observed. The increase of the reflex action is especially remarkable in new-born animals.

It has been shown by Dr. Marcet that different persons respire different volumes of air to furnish to the body the oxygen required, and to yield a given weight of carbonic acid. Thus, to produce one grain of carbonic acid, three persons were found to need, on an average, 9.29, 10.51, and 11.30 litres of air, respectively. The first was twenty-three years of age, the third sixty. The influence of food on the formation of carbonic acid in the body begins in the first hour after a meal, and increases for two or three hours, the

period of maximum respiration of carbonic acid varying in this time. After a certain time the weight of carbonic acid expired decreases more rapidly than the required volumes of air decrease. The influence of local variations of air pressure appears in less air being needed for a given amount of carbonic acid with low pressures than with high; but the degree of the influence varies in individuals.

From experiments in elevated regions of South America, M. Viault finds that the proportion of oxygen contained in the blood of men and animals (indigenous or acclimatized) living in the rarefied air of mountainous regions is sensibly the same as that which is contained in the blood of men and animals living at lower levels. Both he and Mr. A. Müntz find that animals living at great altitudes—that is, in a medium where the pressure of oxygen is low—have the proportion of hæmoglobin in the blood increased; whereby the blood acquires an absorbing power for oxygen which compensates for the effect of rarefaction. Altitude is not necessary to produce these modifications, but the same results may be obtained if, instead of diminishing the amount of oxygen, the quantity of combustible matter is increased.

The researches of Mr. Raphael Dubois have led him to the conclusion that the production of light in animal organisms is due to the transformation of the colloidal protoplasmic granulations into crystalloidal granulations, taking place under the influence of a respiratory phenomenon.

Prof. T. P. A. Stuart has determined by experiments with rings of crinoline steel that the form of the thorax is determined in part by gravitation. The shape of the thoracic segment of the quadruped, of the human fetus, and of the human adult are reproduced in succession if the ring be held between finger and thumb and turned, from lying in the vertical, till it lies in the horizontal plane. The complete reproduction of the different features of the adult human thorax at its most characteristic level is striking. The author's hypothesis was also borne out when deformities were imitated by holding the rings under abnormal modes of suspension.

Digestion.—An investigation is described by R. H. Chittenden and J. A. Hartwell, the object of which was to obtain some positive data regarding the relative formation of albumoses and peptones in artificial gastric digestion. The experiments showed that the formation of peptone is a gradual process, and that the greater part of the peptone formed by the action of pepsin-hydrochloric acid passes through the stage of albumose or proteose, and that at the end of the most vigorous gastric digestion a considerable part of the proteid digested will be in the form of proteose. The authors are not able to say to how great an extent it will be necessary to modify these conclusions in applying them to the proteolytic changes of natural digestion.

The nature of the change undergone by gelatin when, under the influence of gastric and pancreatic juice, it becomes liquid and loses the power of gelatinization, has been investigated by R. H. Chittenden and Fred. P. Solley. The results of the investigation showed that three products are formed in the digestion of gelatin with gastric and pancreatic juice, two of which

are primary products, and are to be distinguished from the third product, gelatin-peptone, by being precipitated by saturation with ammonium sulphate. The primary products by further ferment action are gradually changed into true peptone, the proto passing first through the stage of deutero. Owing to the difficulty of separating the ammonium sulphate completely from the peptone, the latter could not be obtained in sufficient quantity and in a sufficient state of purity for analysis. The gelatoses are readily soluble in cold water, are slowly diffusible, and in composition resemble gelatin itself. They are supposed to be formed by hydration, but their chemical composition affords no evidence of this view.

Recapitulating the results of their experiments on the action of salts on heat coagulation, Sydney Ringer and Harrington conclude that lime and the allied elements favor the heat coagulation of the proteids of serum. A similar action is exerted by magnesium sulphate. It is of interest to note that in the process of coagulation by heat, as in the process of spontaneous clotting of blood, and the clotting of milk to which rennet has been added, lime plays an important part. This similarity of behavior holds for barium and strontium, and is believed to be generic, for the reason that the influence of the same elements upon heat coagulation appears to belong to their salts generally. One is led to infer a possible likeness in nature between heat coagulation and spontaneous clotting of proteid bodies. But that there are differences between heat coagulation and spontaneous clotting we learn from the fact that in the former the solution becomes more alkaline, whereas in the latter, as also in the stiffening of muscle in *rigor mortis*, there is a development of acid. It has further been shown that a certain amount of antagonism exists between potassium and sodium chloride on the one hand and lime chloride on the other.

The following are the results of the researches of L. Huguoncq on the influence of wines on pepsic digestion: All wines interfere with the action of pepsin, those richest in alcohol, cream of tartar, and coloring matter being most injurious. Among the elements of natural wine the coloring matters act in concert with the alcohol and the cream of tartar to arrest pepsic digestion. The acidity of normal wines can not excite the action of pepsin, and in most cases it does not appear to assist. Among the coloring matters introduced fraudulently into wines, methylene blue, azoflavine, solid blue, and magenta interfere with pepsic digestion. The vegetable colors, black mallows, elder-berries, and maki, like aniline, exert an injurious action. Plastering, by removing a part of the cream of tartar, eliminates an element of natural wines which retards the action of pepsin *in vitro*.¹ Digestion is more rapid in presence of plastered wines than of natural wines, but the advantage which plastered wines have in this respect does not conceal their other disadvantages.

Experiments by T. Lauder Brunton and S. Martin on the action of alcohols and aldehydes on proteid substances indicate that the higher alcohols in the series have a less powerful action in precipitating and coagulating proteids than the

lower ones. Allyl alcohol is an exception. It is a powerful coagulant of egg albumen, and is the only alcohol that coagulates albumoses.

Concerning the relation of the salts to casein, Söldner starts with the observation that the basis of the ash of milk can not be neutralized by the acids present, as the amphoteric reaction of the milk requires. He shows that 25 per cent. of the phosphoric acid comes from the phosphorus of the casein or its nuclein, and is performed in the milk. Casein behaves like an acid, inasmuch as it may form salt-like combinations with alkalies, two of which Söldner was able to distinguish as neutral or basic calcium compounds. The neutral compound is probably present in the milk. The existence of various organic acids in the milk is also probable. The calcium salts play an important part in boiling and in the curdling process. Heated milk shows a more marked increase in alkaline reaction which loses itself on cooling, but all feebly alkaline liquids do the same. It is not true that boiled milk can not be curdled with rennet. The process is much slower, because a portion of the essential calcium salts has been changed by heat to insoluble tricalcium phosphate. The addition of alkali has a similar action. Introducing an acid to make the phosphate soluble brings back the curdability. In the same sense the addition of calcium chloride hastens the curdling.

An examination of what are called peptonized foods—Benger's peptonized beef-jelly, Darby's fluid meat, and peptonized milk having been selected for the purpose—by P. Horton-Smith, resulted in the conclusions that these foods consist really for the most part of albumoses, though they contain also a varying amount of true peptone. They can not, therefore, entirely relieve from work the digestive organs; and, also, that the ingestion of large quantities of albumoses and peptones does not disarrange the metabolism of the normal body.

The studies of M. Van Puteren on the digestive processes in infants have shown that the contents of the stomach remain in a condition to be pumped out for an hour and a half after a meal, the quantity diminishing rapidly after the first hour; that the acidity of the infant stomach is much less than that of the adult stomach; that the antifermentative action of the gastric juice seemed to be exceedingly feeble; that the milk-curdling element (called rennin by Foster) was absent in children up to twenty-four days, and could be definitely demonstrated only at from thirty to forty days of age.

From the results of three described experiments the conclusions are drawn by R. H. Chittenden that alcohol in the quantities employed by the experimenters, and in the case of dogs, has no very striking specific action upon the general metabolism of proteid matter; and that, so far as its general influence on proteid metabolism is concerned, it acts in the main simply as a non-nitrogenous food. As such it would yield a certain amount of energy by its own oxidation, and thus tend to protect slightly the consumption of proteid matter, and hence conserve the tissues. Assuming this view to be correct, one could not expect any very great diminution in the nitrogen output under the influence of alcohol. At the same time, it must be remembered that alcohol

is a potent drug, and as such may exert at times some specific action upon metabolic changes. Alcohol may then be considered as having the power to diminish somewhat the metabolism of proteid matter, and thus to conserve the tissues—a power which is dependent mainly upon its character as a non-nitrogenous food. At the same time, it has some specific action upon nutrition, as is manifested in its tendency to increase the excretion of uric acid.

From experiments made upon himself, Dr. Eichenberg found that a small dose of strong alcohol, as in brandy, shortens the time that food in general—whether animal or vegetable, or a mixture—remains in the stomach by more than half an hour. A similar but not quite so marked effect is produced by a dose of dilute hydrochloric acid or mustard. Pepper and cundurango diminish the time the food remains in the stomach by about a quarter of an hour. Beer and an infusion of rhubarb had no effect.

The nature and composition of the peptone formed by the action of trypsin on myosin, and the character of the residue of insoluble matter which is found after the digestion of myosin with pancreatic juice, have been studied by R. H. Chittenden and Ralph Goodwin. The authors found in myosin-peptone another illustration of the fact that peptones differ widely from the mother proteid in containing a much lower percentage of carbon—a fact which they regard as favorable to the view that the formation of peptone is the result of a process of hydration.

An opportunity has been enjoyed by Drs. MacFadyen, Nencki, and Sieber of studying the chemical processes of the small intestine in a patient who had an intestinal fistula. The false anus was situated in the ileum just above the ileo-cæcal valve, so that the materials escaping thereby were wholly composed of the chyme which had passed through the whole length of the small intestine. The patient continuing in this condition for six months, a long series of observations could be made relative to the time and character of internal digestion under varying forms of diet, etc. The material, or chyme, if it might be so termed, that escaped from the fistulous outlet was more fluid and diarrhæal when the diet was albuminous than when it was mainly of a vegetable nature. The flow from the small into the large intestine was steadily continuous, but less marked during the night, when no food was taken; and by some ingenious experiments it was shown that the passage of foods from the mouth to the cæcum occupies at the least two hours; but the traces of the substances introduced did not disappear wholly for from nine to fourteen or even twenty-three hours. The fact was brought out that albumen is hardly, if at all, decomposed in the small intestine. Even the action of the trypsin of the pancreatic juice is small. The bacteria of the small intestine are concerned in the disintegration of the carbohydrates into lactic, acetic, and succinic acids, and into ethylic alcohol. While it is generally believed that the chyme is rendered alkaline by the secretion of the small intestine, the authors found the total quantity of acid to be more than could be neutralized by the bile, pancreatic, and intestinal juices.

During his experiments on emulsions, B. K.

Rachford found that heating neutral olive oil developed fatty acid and made it emulsible, and that if this heated oil was again neutralized it became non-emulsible, thus showing the emulsibility to be due to the acidity. The results of experiments with this and with castor oil indicated that the fatty acids of an oil are the fatty acids best adapted for giving emulsibility to this particular oil. The splitting of fats is a most important preliminary step in fat digestion. That the cooking of fats will develop in them a fatty acid is therefore a fact of considerable physiological importance, and one that, so far as the author knows, has not previously been noticed. It is his belief that the chemical force developed by soap formation is the chief factor in the formation of all physiological emulsions.

The changes produced in casein by the action of pancreatic and rennet extracts have been investigated by J. Sydney Edkins, who mentions among the facts which he has determined that there exists in pancreatic extracts a ferment which has the power of causing some alteration of casein to occur, apart from proteolytic changes, and this is manifested in appropriate conditions by the clotting of milk or casein solution. This ferment can be differentiated to some extent from the proteolytic ferment, and then appears to be a ferment comparable to the rennet ferment of gastric extracts. With active pancreatic extracts the proteolytic ferment has such power that the altered casein exists but a short time before it is further changed. The addition of neutral salts will result in the clotting of milk under the influence of pancreatic extracts, when otherwise no apparent tendency to clot existed. This can not be referred to the retarding influence of such salts upon the proteolytic ferment. When no change apparent to the naked eye has occurred in milk as the result of the action of pancreatic extracts, a change may be shown to have occurred by the application of heat, by the addition of an equal bulk of saturated solution of sodium chloride, or by the addition of exact quantities of acid. The same changes occur in milk when treated with minimal quantities of rennet ferment, in such amount as to produce no actual clotting. This changed casein, or metacasein, as it has been termed by Roberts, may be separated by the addition of sodium chloride, and purified. A solution of this metacasein does not clot when subjected to the action of rennet. The properties of this metacasein indicate that it is closely allied to tyrein.

Nervous System.—In his successive publications on sleep and its causes, Dr. James Capié accepts the position usually taken by physiologists, that the state of sleep is accompanied by a diminished brain circulation, but contests the view that it is due to a diminution of the whole mass of blood within the cranial cavity, and that the compensation for this diminution is got by an increase in the amount of cerebro-spinal fluid in the ventricular and sub-arachnoid spaces of the brain. He believes that, lying within a closed cavity possessing rigid bony walls, the brain can not be affected directly by the pressure of the atmosphere; and that this can influence the interior of the cranium only through

the blood-vessels—so that a force is constantly in operation to maintain the amount of blood within the cranial vessels. The author acknowledges that molecular actions of a subtle kind take place between the blood and blood-vessels and the nervous tissues, and these are much less active during sleep than during wakefulness. The lessened activity in the nutrition of the nerve protoplasm diminishes the activity of the capillary circulation. The change in the balance of the circulation between the arteries and capillaries on the one hand and the veins on the other is regarded by Dr. Cappie as the keystone of the theory of the causation of sleep. The altered balance of the circulation occasions a change in the balance of active pressure, which is not so much within the brain substance as on the surface. It is less expansive and more compressing, and with this compression consciousness is suspended. In a new chapter "On Some Points in Mental Physiology" Dr. Cappie considers how far the peculiarities of the encephalic circulation may affect the functional activity of the different parts of the brain. Starting from the position that the brain is a composite organ, and that different portions are put into a state of functional activity in connection with the discharge of their respective duties, the question of the balance of the circulation has again to be considered. For the part which is more immediately concerned in the production of the particular cerebral operation must become the seat of vascular excitement, and the amount of blood flowing through its vessels will be greater than that transmitted through the vessels of those other parts of the brain which are not for the time so functionally active. Hence a certain tension of the area or center which is actively working must arise, and the encephalic circulation is focused in the direction of activity. In applying his views on the encephalic circulation to the explanation of the phenomena of hypnotism, the author remarks that the first incident in the hypnotic state is a steadily prolonged effort of volition in which the attention is concentrated in a very restricted direction. The immediate consequence is a fatigue of the nerve centers concerned in keeping up the strain. Their molecular motions become enfeebled, the circulation through them is less active, and a condition approaching that of sleep is produced. If then, in the form of a suggestion from another, some stimulus calls into activity a part of the brain not fatigued in the effort of attention, its vascular activity will be increased, and its function will be intensified.

Experiments by G. N. Stewart on the relations between temperature and endocardiac pressure and the action of the nerves of the batrachian heart, show that both the vagus and the sympathetic have their activity diminished as the temperature is lowered, and increased as the temperature rises. The sympathetic curve, however, falls more steeply with falling temperature than does the vagus curve, so that the vagus is generally still active with a temperature at which the sympathetic has ceased to act. An increase of endocardiac pressure sufficient to abolish the inhibitory action of the vagus leaves the sympathetic still active, and the primary augmentation, may be attributed to the sympa-

thetic fibers in the mixed nerves. Heat standstill of the heart, when there is no constant stimulus acting, such as a high endocardiac pressure, is always diastolic, and can never be described as "heart tetanus."

Two Italian doctors have related, in the "*Revista Sperimentale di Firenze*," the results of a series of experiments undertaken to determine the influence which the posterior nerve-roots have on the excitability of the anterior roots. In the first series of experiments the posterior roots were treated with cocaine; in the second, they were divided; in the third, they were stimulated electrically; and in the fourth series the cord was divided below the medulla. It was found that when the posterior roots were rendered functionless the excitability of the anterior roots was diminished; but when the posterior roots were stimulated, an over-excitability of the anterior roots was produced, which went on in a short time to diminished or even abolished irritability, and the same results were found when the cerebro-spinal system was intact and when the cord was divided below the medulla.

Having shown that lesions either of the corpus striatum or optic thalamus of the rabbit produce a rise of bodily temperature, while lesions of the surrounding white matter have no such effect, W. Hale White, in subsequent experiments, attempted to limit more precisely the positions in this neighborhood causing a rise of temperature, and also made experiments on other parts of the brain. He concludes that, the normal rectal temperature of a rabbit being between 101° and 103° F., neither an anæsthetic nor an operation on the brain affects the temperature much, unless some special part of the brain is damaged; that lesions of the corpus striatum, if not large enough to give rise to shock and severe hæmorrhage, and lesions of the septum lucidum cause a rise of temperature; that lesions of the optic thalamus and of the cerebellum do not alter the temperature, and lesions of the white matter around the corpus striatum and optic thalamus do not cause a rise; that lesions of the anterior part of the upper surface of the cerebral vertex either do not alter the temperature, or the alteration is very slight; that lesions of the posterior part of the upper surface of the cerebral cortex may cause irregular rises of temperature, which are quickly produced and last only a short time—sometimes there are several rises and falls after one operation; and that lesions of the crus cerebri cause a considerable rise of temperature.

It is well known that in some animals, when they are under the influence of strong emotions, the hair of particular regions of the body becomes erect (horripilation). Observations to determine the origin in the central nervous system of these erections have been made in the monkey by C. S. Sherrington, and in the cat by J. N. Langley. The authors jointly publish the conclusions that the hair of the monkey, cat, and probably of all animals in which horripilation occurs under the influence of strong emotion, as fear or anger, may be erected by stimulation of nerve fibers which issue from the spinal cord and pass through the sympathetic nervous system. These hairs have no direct spinal supply. The nerve fibers by means of which the erections occur are called pilo-motor nerve fibers. In the

monkey (*Macacus rhesus*) the pilo-motor nerve fibers for the head issue from the spinal cord in the anterior roots of the third and fourth and to a less extent of the second and fifth thoracic nerves; they run to the sympathetic chain, ascend the cervical sympathetic, and become connected with nerve cells in the superior cervical ganglion. The parts of the head affected are the forehead, the front half of the scalp, the temple, the cheek, and the upper part of the whisker. On stimulating one sympathetic the effect is chiefly on the same side, but stretches a short distance over the median line. Pilo-motor nerve fibers for the buttock, thigh, and tail issue from the spinal cord in the roots of the twelfth thoracic, first, second, and third lumbar nerves; they pass into the lumbo-sacral sympathetic chain and descend it: they are finally distributed in the skin of the upper part of the buttock, the back of the thigh nearly as far as the knee, and to the root of the tail. In the cat, pilo-motor nerves leave the spinal cord to run to the sympathetic chain in each nerve from the fourth thoracic to the third lumbar: sometimes also from the third thoracic nerve. Fibers from the third or fourth thoracic to the seventh thoracic nerve inclusive, ascend in the cervical sympathetic, become connected with nerve cells in the superior cervical ganglion, and supply the hairs of a region between the ear and eye, and of a strip of skin beginning at the back of the head and extending down the back of the neck. These fibers are not functional in all cats. The hairs of a strip of skin of the back and of the dorsal part of the tail are supplied by pilo-motor fibers from about the seventh thoracic to the third lumbar nerve. This strip overlaps with a strip of the skin of the back about ten centimetres long which is supplied by each of the thoracic spinal nerves. There are reasons for supposing that each spinal nerve, the roots of which contain pilo-motor factors, is connected with four or five sympathetic ganglia and their gray rami. The second and third lumbar nerves supply pilo motor fibers to the tail, and in addition the second lumbar nerve possibly supplies a small part of the back. With any two spinal nerves, from the seventh thoracic to the third lumbar inclusive, the position of the maximum effect on the hair is more positive with the lower nerve than with the upper one. The pilo-motor nerves for the tail are connected with nerve cells partly in the third sacral, but chiefly in the first coccygeal ganglion. Stimulation of the spinal nerve or of the sympathetic chain on one side gives mainly unilateral effects on the back; but in the tail the effects are usually bilateral.

Experiments by G. N. Stewart go to show that the conduction in animal tissues is chiefly electrolytic; that the best conductors are the inorganic constituents of the tissues, and next some of the nitrogenous metabolites, while the proteids are exceedingly bad conductors; and that the proteids are affected not by primary electrolysis, but by the products of electrolysis of the salts. Further studies have been made on the effects of electrolysis on isolated tissues and on some of the liquids of the animal body, and the effect in the living body is still under examination.

Special Senses.—A case bearing upon the relation of the optic thalamus to the special senses and to common sensibility is described by Dr. Hugo Engle, of Philadelphia. The patient had felt vague symptoms of affection of the central nervous system, consisting chiefly of pain in the head, with occasional acute exacerbations, and giddiness. One morning he staggered, and associated this with loss of sensation in the right foot. He next found that the whole right side of his body was anæsthetic, and that he had lost the power of tasting and smelling on that side. Nine days later he had lost taste and smell on both sides, and was deaf in both ears. Two days later he became suddenly blind in both eyes, had frequent convulsions, and died in one of them. At the necropsy, characteristic changes were found in the cerebral, and a large gummatous growth, starting apparently from the fornix, had been spreading back over both optic thalami. It was more extensive and apparently older on the left side than on the right—an indication that this side had been first involved in the morbid process, which corresponded also with the earlier symptoms on the right side of the body. The author points out the existence of four collections of cells in the thalamus described by Luys. The most anterior, which is probably in some way connected with smell; the second, possibly connected with hearing; the third, with general sensibility; and the fourth, in the region of the pulvinar, connected with the visual tract.

The existence of a membrane lining the fossa patellaris of the corpus vitreum had been the subject of discussion till it appeared to be contradicted definitely by Schnalbe in 1886-'87. Prof. T. P. Anderson Stuart has, however, informed the Royal Society that he has found that in the fresh, unaltered eye, after the removal of the lens in its capsule, there may be raised off the surface of the jelly a membrane which, when strained and mounted, does not show any structure. When the membrane from the four-year-old ox eye was isolated and tied over the mouth of a test-tube $\frac{3}{4}$ -inch wide it sustained a column of water 40 inches high. A smaller column than this may be sustained for days together. When isolated, it may be dried to form a delicate membrane.

While the common teaching is that there is a direct continuity of substance between the suspensory ligament and the capsule of the lens, an observation by Prof. T. P. A. Stuart seems to indicate that the ligament is only cemented to the capsule. On opening eye-balls in an advanced state of decomposition—putrid—he found the lens in its capsule free, and no indication of any rupture of tissue along the line of attachment of the suspensory ligament. The ligament was found intact projecting from the collapsed vitreous body as a sort of frilled ring with a free edge.

Prof. Dubois, of Bern, studying the production of luminous sensations in the human eye under the action of galvanic currents, finds that sudden variations of intensity, especially at making and breaking the circuit, produce such flashes. With a moistened plate at the nape of the neck and a pad on the eye, a slight flash was perceived at a very low intensity; while at a considerably higher intensity the observer could

perceive which pole was applied to the eye. On the other hand, the retina responded much less readily to discharges from condensers or induction coils.

Dr. C. L. Herrick, in the American Association, presented the case of a supposed tubercular disease of the eye of a cat, which was shown by autopsy to be accompanied by a marked degeneration in that part of the brain—in the occipital lobe—which is supposed to be connected with the organ of vision. Another confirmation is thus afforded of the theory of cerebral localization.

From the necropsy of a right handed woman who had been word-deaf for fifteen years, and deaf and partially paralyzed for nine years, Dr. C. K. Mills thinks he is justified in contending that the center for word-hearing is situated in the hinder third of the first and second temporal convolutions, and is possibly restricted to the second, and that, although the auditory cerebral arrangements have their chief development in the left temporal lobes, destruction of the opposite center is necessary in order to abolish hearing entirely.

Muscular System.—It has been observed by Dr. John Berry Haycraft that where a muscle is stimulated by an electrical shock all the fibers of the nerve receive the same stimulus and all the fibers of the muscles to which the nerve passes contract together and in the same way. This is not the case when a muscle contracts on receiving a natural nerve stimulation. The central nervous system seems unable to affect all the fibers of a muscle through the numerous nerve fibers passing to it in such a manner that they all shall contract exactly in the same way. This is supposed to be the case from the fact that fascicular movements are always present within a muscle during a voluntary or a reflex contraction, so that tracings taken from different parts of the same muscle invariably differ from one another. These fascicular movements occurring within it will prevent any muscle from pulling with perfect steadiness on any lever or other registering apparatus, and the tracings taken by means of such apparatus will show oscillatory waves, often very rhythmical in their appearance. Many observers have concluded from an explanation of these tracings that they indicate that the central nervous system discharges impulses into the muscle at a rate corresponding with that of the oscillations observed. The author finds that the fascicular movements account fully for the oscillations; he suggests, also, that they probably account for the production of the muscle sound, which Helmholtz has pointed out was chiefly an ear-resonance sound.

As the results of research made several years ago, Prof. Haycraft believes that the cross-stripping of a muscle depends on the moniliform divisions of the muscular fibrils, and not on their structure. In later experiments he took castings of muscular fibers, assuming that if the casts should exhibit the microscopical appearance of the muscle those appearances could be due only to its form. After several trials he found the most satisfactory method to be that of stamping moist collodion with fibers. A drop of collodion was placed upon a glass slide, and before it was quite dry some muscle fibers were pressed upon it

with the fingers. These were then removed, and the film, on being examined with the spectroscope, was seen to be covered by exquisite impressions of the fiber. Every stripe was clearly and sharply defined. When the collodion dried the film shrank and the little impressions disappeared. The castings showed the microscopical appearance of the fiber in whatever stage of contraction or relaxation it might happen to be.

To the usual well-known ways of stimulating muscles to contraction—viz., electrical, thermal, mechanical, and chemical—M. d'Arsonval has recently added that by means of light. He could not, indeed, get any contraction in a fresh frog muscle when he suddenly threw bright light upon it in a dark chamber; but, having first in darkness stimulated a muscle with induction currents too weak to give a visible effect, and then suddenly illuminated the muscle with an arc light, the muscle showed slight tremulation. Not thinking this conclusive, however, M. d'Arsonval attached a muscle to the middle of a piece of skin stretched on a funnel, and connected the tube of the funnel by means of a piece of India-rubber tube with the ear. The muscle being now subject to intense intermittent light, he heard a tone corresponding to the period of illumination, and this ceased when the muscle was killed by heat.

The origin of the croaking or grunting noise made by the perch (*Haploidenotus grammicus*) has been investigated by Dr. W. R. Hamilton. The fish is furnished with a masticatory apparatus in the gullet, of which the lower division has a flat, triangular upper surface, studded over with spheroidal processes answering to teeth; while the upper division is composed of two parts united by a ligament, the lower surfaces of which are supplied with similar teeth. The divisions of this apparatus are furnished with powerful muscles by which they can be pressed together and moved rapidly on each other. By this process the fish masticates the crustaceans on which it feeds, and the croaking is produced by the teeth coming in contact.

Herr Meyer, of Hamburg, denies that ventriloquism consists in speaking while inspiring and without the cavity of the mouth acting as a resonator. On the contrary, he says ventriloquists speak while expiring and move their mouths. Laryngoscopic observations on the author, who practices the art, showed that in ventriloquizing the vocal opening of the larynx is shortened as it is when producing the falsetto, and that the soft palate is pressed back and the uvula becomes invisible. The graphic record of experiments made by Prof. Gad on Herr Meyer showed that the curve obtained when a certain sentence is spoken in the ordinary way is identical with the one which is described when the same sentence is spoken ventriloqually. In the latter case the volume of air expired was less than during normal speech. Dr. Benda believes that when ventriloquizing the Eustachian tubes are open, and the cavity of the tympanum, together with the tympanic membrane, are set into simultaneous vibration, for the curious veiled tones of ventriloquism resemble the tones produced by speaking while yawning, and then the Eustachian tubes are certainly open and the tympanic cavity acts as a resonator.

Explaining to the Physiological Society of Berlin the experiments which he had made with a view to the analysis of the muscular sense, Dr. Goldschneider said that he had availed himself of localized anæsthesia produced by Faradic currents, and of the exclusion of conscious volitional impulses. Perception of motion takes place at the joints, and is not affected by want of sensitiveness in the skin. The time required for the perception of the motion is very short, and is unaffected by the position of the limb. The muscles are not concerned in perceiving the position of the limb, this being dependent on the central nervous system, and the recognition of resistance experienced in raising and lowering weights is brought about by means of the varying pressure exerted by the surfaces of the joints against each other. The speaker summed up the outcome of his researches as a whole in the conclusion that the muscular sense is compounded of three peripheral sensations—of a sensation of movement resulting from the displacement of the condyles, of a sensation of weight produced by the tension of the tendons, and of a sensation of resistance due to the pressure of the articular surfaces against each other. There is still another sensation—that of position—which results from pressure, tension, and stretching of the skin and other local stimuli. Prof. Gad held, in opposition to these views, that the perception of resistance is not directly a sensation, but a judgment, based upon the relation of the movement to the innervation and muscular tension.

Miscellaneous.—A series of investigations of the growth of guinea pigs are described by Mr. C. S. Minot, in a paper on "Senescence and Rejuvenation." The author remarked some curious variations in the growth of male and female animals about the age of puberty, and a diminution in the rate of growth which occurs in animals of both sexes, beginning about the end of the fourth month, and which is greater in amount and longer in duration in the female, is believed to correspond to the post-pubertal retardation in man. Each animal, according to the observations, strives to reach a particular size, but while some grow for a time too rapidly, others grow too slowly; but it appears that if an individual grows for a period with excessive rapidity, a period of slower growth immediately follows, and *vice versa*. Those that remain behind for a time, if they continue in good health, make up the loss soon after. Hence, to dwarf a guinea pig permanently requires a very long interference. The fact is brought out that a female guinea pig may bear young without impeding its own growth. But immediately after delivery a great and rapid loss of weight occurs, and continues for several days. The diminution then proceeds at a slower rate for about three weeks, after which the recovery of weight begins. In the process of growing old, one of the most characteristic features is loss of the power of growth. Mr. Minot concludes that a progressive loss in the power of growth takes place in guinea pigs, beginning almost immediately after birth, and he extends his conclusion to embrace the supposition that a loss of growth power is equally demonstrable in the case of men and of other animals, and that there is lit-

tle doubt that it is true at least of all mammals. This conclusion raises the question whether other animals do not obey the same law, and sets, too, the more general problem whether in all living beings there is not a certain impulse given at the time of impregnation, and whether this impulse does not gradually fade out, so that from the very beginning of the new growth there occurs a diminution in the rate of growth.

Concerning the action of alcohol on the system, Chittenden's experiments show that in dogs it causes no very striking specific action upon the general metabolism of proteid matter. This author supposes alcohol to act as a non-nitrogenous food, protecting the nitrogen of the body and somewhat lessening the nitrogenous output. The excretion of uric acid was much increased by the action of the alcohol, but no distinct diuretic action was observed. Some inconclusive experiments by Strassmann upon a litter of puppies, some of which were given measured quantities of spirits, tended to show that the percentage weight was distinctly greater in the alcohol dogs for liver and kidneys, but especially for the fat. In experiments upon man, Strassmann endeavored to determine the elimination of alcohol by the lungs. In six experiments, upon three persons, the average amount excreted by the lungs during four hours was 5.1 per cent. of the quantity of alcohol taken. In five experiments, on two persons, an average excretion of 1.7 per cent. of alcohol through the kidneys was determined. Certain variations in these experiments suggested the possibility of the influence of renal peculiarities. Strassmann agrees with Bodländer, with whose experiments he compared his own, in supposing that the greater part of the alcohol is disposed of in the body and not excreted as alcohol. It appeared incidentally in another series of experiments that 60 grammes of alcohol had no deleterious influence upon the digestive powers of a man accustomed to take that quantity. The effect of the different alcohols on the heart has been tabulated by Dr. Hemmeter according to the average lessening of the amount of blood pumped out during thirty seconds. The table shows the effects to be in the following order, beginning with the smallest and advancing to the largest: Ethyl, methyl, propyl, butyl, and amyl alcohol. It shows a remarkable increase of the weakening effect of the alcohol as the member of CH_2 molecules increases, it being, with the exception of ethyl, or common alcohol, twice as bad in the case of each of the members as of its predecessor in the series. The justness of the criticism set up in these experiments has, however, been criticised, and they can not be regarded as conclusive. Attention is called by the author of the experiment to the fact that ethyl alcohol appears from the table to be the least deleterious of the series, and that it fails to act on the heart as, according to its chemical position, it should.

In experiments by MM. Charrin and Roger to determine the effects of fatigue upon the susceptibility to infection, 8 white rats which had been severely exercised for four days in a rotating squirrel cage were inoculated with the charbon virus, and with them 4 other animals that had not been exercised. Seven of the 8 tired animals died, while the 4 which had not

been subjected to the exercise survived. Similar results were obtained in other modified experiments, all leading to the conclusion that susceptibility is increased by fatigue.

A series of experiments is reported by Herr Rubner on the difference with which dry heat and cold and moist heat are born by the animal and human constitutions. Dogs, fasting or fed, being observed in an air calorimeter, it appeared that moist air increased the loss of heat by conduction and radiation. For every variation of 1 per cent. in the air moisture, heat was parted with to the extent of 0.32 per cent. In a previous investigation Herr Rubner had demonstrated the lessened yield of water by evaporation from animals when the air moisture is increased, involving lessened loss of heat. Here, then, are two antagonistic influences. The author is inclined to regard the increased radiation and conduction in the open air as the primary action, and the diminished evaporation as secondary. The colder feeling of moist cold than dry is readily explained by the increased heat radiation. In moist heat, with the sense of oppression it brings, this factor passes into the background. The degree of temperature, and some other influences of complex nature, also affect the amount of radiation.

The investigations by Heidenhain of the flow and production of lymph tend to the support of the theory that the supply of lymph to the tissues is derived from a secretion, as against that which regards it as a filtration from the blood. Among the considerations cited in support of this view are the amount of lymph that has to be furnished under certain conditions, certain influences of changes in arterial or venous pressure causing conditions not in accord with any filtration theory; and the discovery by the author of the existence of "lymphagogues"—substances which increase the lymph flow either by causing a direct secretion from the blood, or by withdrawing water from the tissues and sending it into the lymph and into the blood. In the increase of the lymph flow under the operation of lymphagogues of the first class, a quantitative comparison shows that the lymph has gained water and organic substances, but not salts, and that the blood plasma has lost water and organic substances. That this transfer of material is no filtration, is shown by the fact that when the blood flow has been shut off for some time the introduction of organic substances causes no increase in the lymph flow the prolonged anæmia, it is assumed, having altered the cells whose activity is involved. To the second class of lymphagogues belong sugar, urea, and salts when sent into the blood in considerable quantities. Such substances leave the blood rapidly, as others had shown, and the blood gains water. But the introduction of grape sugar or sodium chloride also enormously increases the amount of lymph and the flow of urine from the kidney. Since the amount of water in the blood, in the lymph, and in the urine becomes greater, it follows that this "sugar lymph" can have no other source than the water of the tissues; it is tissue lymph, and not blood lymph. The experiments suggest that the action of many saline waters may be due to such movement of the lymph as is shown in

them, which may be thought to purge and purify the tissues without the ordinary purging action of the salts being an important feature at all.

The way in which altered plant pigments take part in larval coloring has been under investigation by E. B. Poulson. The earlier experiments indicated that the green ground color of larvæ of certain species was due to derived green pigments dissolved in the blood, while it was argued that in other species the pigments passed from the blood into the hypodermic cells and so colored the larvæ. It was still uncertain whether the color of the blood assisted in producing any of the ground color in those larvæ in which the color was also segregated in the hypodermic cells. The author's later investigations with the larva of *Sphinx ocellatus* have shown that the blood is only faintly tinged with derived pigments, and that it can not produce any effect upon the larval appearance until it has been collected in the superficial cells. The fact that the derived pigment is associated with a proteid in the blood makes it almost certain that the processes of modification and association are the direct results of protoplasmic activity, and not of ferments, etc., which have themselves been formed by that agency.

Dr. F. Maas describes two chemically distinct groups of pigments occurring in man—melanine and granular coloring matters. The latter are found at all periods of life, but increase in quantity and in the size of the granules with age. They are normal products, not morbid; are not only transformed, but are produced by corpuscle-carrying cells, and are not wholly derived from the blood. The pigment found in the heart is derived from a fatty body. The several pigments can be distinguished by their reactions with hydrochloric and acetic acids, and with caustic potash.

Experiments are described by Dr. Yatsuty, of Zhitomir, Russia, on the influence of age on the rapidity of absorption of drugs. The author gave iodide of potassium or salicylate of soda, in doses proportioned to the weight of the individual, to healthy male subjects of ages ranging from eight to over eighty years. The urine was examined every three minutes in the case of both salts, and the saliva every two minutes in the case of the iodide—while no evidence of salicylic acid was detected in the saliva at any time. The general result of the tabulated experiments showed that absorption occurred more rapidly in the younger persons in proportion to their youth, but wide variations occurred in comparing individuals; so that although the average rapidity of absorption was found to diminish distinctly as age advanced, it was not possible to say with certainty that a particular person would absorb one of the drugs more rapidly than a person who was a good deal older.

PORTER, DAVID DIXON, an American naval officer, born in Chester, Pa., June 8, 1813; died in Washington, D. C., Feb. 13, 1891. His great-grandfather commanded a Boston merchantman, and rendered substantial assistance to the colonies during the Revolution; his grandfather commanded with distinction two Continental vessels in the same war; and the services of his father during the war with England in

1812-'15 were conspicuous in that unusually brilliant naval period. The laws of heredity would have been violated had the subject of this sketch not adopted the profession of arms. He studied at Columbian College, Washington, D. C., for some years, and saw his first service in 1824, when, at the age of eleven, he accompanied his father, then in command of the "John Adams," on an expedition to suppress piracy in the West Indies. His father resigned his commission in the United States navy in 1826 on account of what he deemed unjust treatment in regard to the Foxardo incident, and accepted command of the Mexican naval forces, followed by his son, who was appointed a midshipman in the same service. Young Porter was sent to the schooner "Esmeralda," commanded by his cousin, Captain D. H. Porter, and engaged in preying upon Span-



DAVID DIXON PORTER.

ish commerce. After an active, adventurous, and successful cruise, the ship returned to Key West on account of a mutiny on board, which was discovered by Midshipman Porter, then fourteen years old. He handed the pistols and sword to Captain Porter, who disabled the ringleaders and brought all to terms. Only three of the crew had remained faithful, and with these men on duty, and the mutineers ironed by a novel device to the deck, the schooner passed safely through the blockading Spanish fleet and got to port.

In 1833 Porter sailed as midshipman in the "Guerrero," commanded by his cousin. Off Mariel, Cuba, a convoy of Spanish vessels was encountered, accompanied by two brigs-of-war. Notwithstanding the inferiority of force, the "Guerrero" was cleared for action and headed for the enemy. The brigs ran under cover of a small fort, a spirited fire was opened, and in half an hour one of the brigs struck her flag and several of the convoy were sunk. At this juncture a Spanish frigate, the "Lealtad," hove in sight, and the "Guerrero" made sail to escape. Next morning the Mexican was overhauled by the Spaniard, and, seeing that escape

was impossible, Porter cleared for action. His first two broadsides were most effective, but the superiority of the "Lealtad's" metal told, and at the end of an hour the "Guerrero" was a surrendered wreck, the captain killed, and several officers and men killed or wounded. The "Guerrero" was towed into Havana, and Midshipman Porter was confined as a prisoner, having declined parole.

On Feb. 2, 1829, Porter was appointed a midshipman in the United States navy, and in 1830 he was attached to the frigate "Constellation," Mediterranean squadron. He was attached to the frigate "United States" in 1833, and to the line-of-battle ship "Delaware" in 1835, both belonging to the Mediterranean squadron. He was promoted to passed midshipman on July 3, 1835; was on coast-survey duty in 1837-'40; promoted to lieutenant, Feb. 27, 1841; on the frigate "Congress," Mediterranean squadron, in 1843-'45; at the Naval Observatory in 1846; on a special mission to Hayti and Santo Domingo, under the Department of State, in 1846. His success in this mission was substantial, and received high praise.

The outbreak of war with Mexico found Lieut. Porter unattached in Washington, and soon he was ordered to New Orleans in charge of recruits for the Gulf squadron, and on his arrival at Vera Cruz with 300 men was ordered by Flag-officer Conner, as first lieutenant of the "Spitfire," Capt. Tatnall. Operations against the enemy began on the relief of Commodore Conner by Commodore M. C. Perry, March 21, 1847. Fronting the south face of Vera Cruz a battery constructed and manned by the navy did great damage to the fortifications of the city, and in two days silenced most of the guns on that side. As several forts on the water side, opposite San Juan d'Ulloa, were out of effective range of the shore battery, Commodore Perry sent the "Spitfire" and three other vessels to attack them. The little flotilla anchored close under the city walls, and in a few hours effected great destruction in the enemy's works. At night Lieut. Porter volunteered and received

permission to scout in and sound the passages that led to the flanking forts of the city. This undertaking was completely successful, and early the next morning the four vessels got under way and attacked the southern batteries, Lieut. Porter acting as pilot through the intricate channels. The enemy was driven from his works, but the flotilla being exposed to a hot and dangerous fire from San Juan d'Ulloa, Commodore Perry signaled Tatnall to retire from action. This gentleman, however, had ordered his signal quartermaster not to look toward the flag-ship, and the action went on until a verbal order to retire at once was brought to Tatnall from the flag-officer. The flotilla then withdrew, amid hearty cheers from the main squadron.

In April, 1847, the "Spitfire" was again employed on active service. She, with four gunboats and a few small steamers, was dismantled for crossing the bar on an expedition to Tuspan. On this occasion she acted as Commodore Perry's flag-ship. The enemy was well fortified and armed, and had made all preparations for a determined resistance, but in half an hour after the fire was opened the Mexicans were

driven from their guns, the batteries were captured, and Tuspan lay at the mercy of the flotilla. Lieut. Porter, now executive of the "Spitfire," directed the fire of the heavy pivot gun, and to that gun's accuracy and rapidity of work was due much of the quick success of the fight. In May Capt. Tatnall was relieved of the command of the "Spitfire" by Capt. S. S. Lee, and the flag-officer, in early June, began preparations for an attack on Tobasco, up the river Tobasco. The expedition was composed of the light-draught vessels of the squadron, two bomb-vessels, and several armed boats' crews, the whole being under the personal supervision of the commodore. On June 16 the "Spitfire" forced the obstructions in the river, passed up and attacked Fort Iturbide, with a full force of men and seven heavy guns. Lieut. Porter, with 68 men, landed, charged, and captured the fort. Meanwhile the commodore had landed 16 miles below and was marching overland upon Tobasco, and five hours after the capture of Fort Iturbide reached that point, his men very much overcome by the heat. But for the action of the "Spitfire," Commodore Perry's march might have had a more disastrous termination. For this gallant affair Commander S. S. Lee was promoted to the command of the frigate "Mississippi," and Lieut. Porter was given command of the "Spitfire." Porter was in every action on the Atlantic coast of Mexico during the war, and was also in several engagements on shore. His vessels never had an accident. In 1848 and 1849 Lieut. Porter was on coast-survey duty. On the discovery of gold in California he received leave of absence and obtained command of a Pacific mail steamer, the "Georgia." During 1854 he commanded a merchant vessel, the "Golden Age," and in 1855, his furlough having expired, he was ordered to the command of the store-ship "Supply." He was attached to the navy yard at Portsmouth, N. H., from 1858 to 1860.

On the breaking out of hostilities in 1861 Porter volunteered to save Fort Pickens, then invested by Gen. Bragg, if provided with sufficient force. President Lincoln, who had great confidence in Porter's dash and ability, considered and approved the scheme, and gave him command of an expedition consisting of the side-wheel steamship "Powhatan" and the troop-ship "Arctic," carrying 600 troops with their arms and munitions of war. The "Arctic" arrived off Pickens on April 16, 1861, and the "Powhatan" a day later. The first hostile gun fired by the navy during the civil war was fired by Porter at a flotilla of small boats proceeding to the attack of Fort Pickens. The enemy retreated in disorder, and in a few hours the fort was rendered secure against assault, and garrisoned by Gen. Meigs's men from the "Arctic."

In June Porter was on blockading duty; his ship, the "Powhatan," was stationed at the mouth of the Southwest Pass of the Mississippi, while the "Brooklyn" was guarding Pass à l'Ouvre. Notwithstanding the precautions taken and the vigilance maintained, the Confederate steamer "Sumter" got through Pass à l'Ouvre and put to sea. In a short time she committed great damage to our commerce and captured several prizes, one of which, the "Bradford," was taken by the "Powhatan's"

boats while attempting to steal into Barrataria Bay. Learning thus of the "Sumter's" escape, Porter made after her, but although he kept up the chase through St. Thomas, Curacao, Trinidad, Maranham, and Paramaribo, and although he was at one time within 30 miles of her, the privateer finally escaped, and the "Powhatan" returned for repairs to the United States, where Porter was detached and promoted to the rank of commander.

On his relief from the command of the "Powhatan" he was called into consultation with the President, the Secretary of the Navy, and the Assistant Secretary, Mr. Fox, in regard to a proposed demonstration against New Orleans, which Commander Porter strongly recommended. He was also delegated to ascertain whether the command of the proposed expedition would be agreeable to Capt. David G. Farragut. That officer gladly seized his opportunity, and Porter was made second in command, in charge of a mortar flotilla, at his own suggestion, an auxiliary force, the character of which he was allowed personally to determine. It has been said on excellent authority that the command of the Mississippi fleet was first offered to Porter, who declined on the ground that he did not hold sufficient rank for a command of such magnitude, and that his services up to that period had not been of such importance as to justify his selection. That he then proposed Farragut's name is beyond all doubt. On the fleet's arrival at Belize many of the ships were found to be so deep that it was necessary to lighten them before they could cross the bar. Of this work Porter took personal supervision, and piloted the ships up the river preparatory to the passage of the forts, selecting a berth for each vessel. By Porter's order the mortar boats were covered with bushes, so that it was difficult for the enemy to distinguish them from the surrounding banks, and by this stratagem the effect of the Confederate fire was materially diminished. The result of the attack on Forts Jackson and St. Philip is well known. Throughout the engagement Porter was Farragut's right hand and counselor. For six days and six nights the mortar fleet unrelentingly bombarded the forts, the men being divided into three watches, and this destructive fire was a prominent factor in the successful result of the engagement. Flag-officer Farragut pushed past them to New Orleans, leaving their final reduction to Porter, to whom they surrendered on April 28, 1862. After the passage of the forts by Farragut's fleet, and after the terms of their capitulation had been agreed upon, the enemy set fire to the "Louisiana," a formidable ironclad, and started her down the river. When she hove in sight of the mortar flotilla they, being defenseless, left the scene of action, while Porter with all his fighting ships held their position, not one of them lifting her anchor. When nearly abreast of these vessels the "Louisiana" blew up.

For his services in this affair Porter received the congratulations and thanks of the Department. Mention was made of the brilliance of the victory, the hundred and forty-four hours consecutive bombardment by the mortar flotilla, and the fact that success was largely due to Porter's able assistance and untiring energy.

Having reduced the forts, Porter proceeded

with his mortar fleet to Vicksburg by order of the flag-officer, who had found the place strongly fortified. The mortar boats again did splendid service, and Farragut successfully passed the batteries on June 28, 1862. In his official report to the Secretary of the Navy the flag-officer says: "Commodore D. D. Porter came up on our starboard quarter with the 'Octorara,' 'Westfield,' 'Clifton,' 'Jackson,' 'Harriet Lane,' and 'Owasco,' and opened fire in fine style on the enemy." And again: "The mortar flotilla have never done better service than at Vicksburg, notwithstanding the imperfection of their fuses. I have no doubt they did the forts on the heights great damage, and on the morning of the attack did much to distract the fire from the fleet."

In July Porter was ordered with the mortar flotilla to operate against Fort Darling, on James river, just below Richmond. But the Secretary changed his plans and Porter was detached from the flotilla which he had made famous and ordered to the command of the Mississippi river squadron as acting rear-admiral. He took command on Oct. 15, 1862, and at once began active operations against the enemy.

In November, Capt. H. Walke, in the "Carondelet," commanded an expedition of ironclads and wooden gunboats up Yazoo river, during which the ironclad "Cairo" was sunk by a torpedo. A few days later Porter arrived at the mouth of the Yazoo, and led an expedition up the river to clear the channel of torpedoes and to draw a portion of the enemy from Vicksburg to the defense of the river. By Dec. 26 the river was cleared of all obstructions up to the place where the "Cairo" was sunk. On the 27th the expedition arrived at a bend in the river where a line of fortifications began, and the river was obstructed by a heavy iron-plated raft. While the boats were engaged in clearing the river, the flag-ship "Benton," Lieut.-Com. Gwinn, moved up to cover them. She was struck 30 times, and many of her crew were killed or wounded, among the latter her commander, mortally. The other vessels handsomely supported the flag-ship, and two of the guns were silenced; but the enemy's works could only have been captured by a strong landing-party.

On Jan. 4, 1863, Gen. McClernand having requested the co-operation of Admiral Porter in an attack upon Arkansas Post, the "Baron de Kalb," Capt. Walke, "Louisville," Lieut.-Com. Owen, and "Cincinnati," Lieut.-Com. Bache, with several light-draft vessels, were detailed for the purpose. Rear-Admiral Porter, in the flag-ship "Black Hawk," accompanied the expedition. After a battle of two days Col. Dunnington, commander of the fort, surrendered to the army and navy, yielding his sword to Admiral Porter. Seventeen heavy guns and a large number of troops were captured. For his services here Porter received the thanks of Congress.

On the next day Capt. Walke, with a force of gunboats, proceeded up White river. On the 14th the town of St. Charles was found evacuated. At Duvall's Bluff he landed a party and took possession of two fine 8-inch guns and about 200 stand of arms and accoutrements. At 4.30 A. M., Feb. 2, the ram "Queen of the West," Col. Charles E. Ellet, ran the Vicksburg batteries, with orders from Porter to capture or destroy

the enemy's transports between Vicksburg and Port Hudson. Col. Ellet arrived at Red river, capturing and destroying on his way several fine transports. The "Queen of the West" then returned to the vicinity of Vicksburg. A few days later she steamed down and entered Red river. On Feb. 13, Lieut.-Com. George Brown, in the "Indianola," ran the batteries of Vicksburg with orders to join the "Queen of the West." Shortly afterward intelligence was received of the destruction of the "Queen of the West" in Red river, and that the "Indianola" had been sunk in the Mississippi. They had destroyed a large amount of property.

In March a daring and novel attempt was made by Porter to get into the rear of Vicksburg. By ascending Steele's Bayou, which is merely a ditch, he was hopeful, by cutting a way through the woods and widening the channel, of finding an entrance into Yazoo river and here effecting his object. When Porter arrived within a short distance of Rolling Fork he found the channel impracticable and was forced to return. The expedition penetrated into the heart of the enemy's country before being discovered, and large quantities of cotton were destroyed. An attempt was made by Lieut.-Com. Watson Smith, with a detachment of gunboats, to secure control of the Coldwater, Tallahatchee, Yallabusha, and Yazoo rivers, which would have opened the way to the capture of Vicksburg, as most of the enemy's supplies were received through these streams. Owing to the want of troops to co-operate, the object of the expedition failed, although several steamers and 5,000 bales of cotton were destroyed. The "Switzerland" and "Lancaster," in attempting to pass the Vicksburg batteries to join Farragut at Port Hudson, were sunk, and many of their men disabled.

On April 16, 1863, the fleet, led by Porter, who had hoisted his flag on board the iron-clad "Benton," ran past the Vicksburg batteries. The vessels started in the following order, 50 yards apart: "Benton," Lieut.-Com. Greer; "Lafayette," Capt. Walke, with the "Gen. Price" lashed on the starboard side; "Louisville," Lieut.-Com. Owen; "Monnd City," Lieut. Wilson; "Pittsburg," Acting Volunteer Lieut. Hoel; "Carondelet," Acting Lieut. Murphy; and "Tuscumbia," Lieut.-Com. Shirk, with 9 army transports. Nearly all the vessels took in tow barges containing each 10,000 bushels of coal, and all passed the batteries in safety. On April 29, Porter, with most of the armed vessels that had passed the batteries, bombarded for six hours the formidable works at Grand Gulf. At 6 P. M. the transports, containing a detachment of Gen. Grant's command, passed down under cover of the fire. On May 3, Porter, with four ironclads, proceeded to Grand Gulf to attack the forts, but found them evacuated; and before leaving, the enemy had destroyed all the ammunition and spiked the guns. Next to Vicksburg, this was the strongest position on the Mississippi. Its occupation greatly facilitated Grant's operations in reducing Vicksburg.

On April 29, Lieut.-Com. Breeze, with the "De Kalb," "Choctaw," and "Tyler," made a feigned attack upon Haines's Bluff, in co-operation with a division of the army under Gen. Blair, to prevent the enemy from sending

re-enforcements to Grand Gulf. The desired effect was accomplished. Early in May Porter ascended Red river as far as Alexandria, which he took possession of and held until Gen. Banks arrived. On the 15th he crossed over to Yazoo river, to be ready to co-operate with Gen. Grant. On the 18th the firing in the rear of Vicksburg indicated the approach of Grant. The cannonading was kept up furiously for some time, when Porter discovered a company of artillery advancing, taking position, and driving the enemy before them. Gen. Sherman's division had come in to the left of Snyder's Bluff, and the enemy had been cut off from joining the forces in the city. The "De Kalb," "Choctaw," "Linden," "Romeo," "Petro," and "Forest Rose," under Lieut.-Com. Breeze, were sent up the Yazoo to open communication with Gens. Grant and Sherman. This they succeeded in, and in three hours Porter received letters from Grant, Sherman, and Steele, informing him of their successes, and asking that provisions be sent up, which was done at once. In the mean time Walke, in the "De Kalb," pushed on to Haines's Bluff, which was found evacuated, and took possession of the guns, tents, etc. The works were destroyed. Upon this being reported to Porter, he sent up a force of gunboats from below Vicksburg to fire at the hill batteries, which was kept up for two or three hours. At midnight they moved up to the town and fired upon it for an hour, and continued at intervals during the night to annoy the garrison. On the 19th six mortars were placed in position, with orders to fire rapidly day and night. On the evening of the 21st Porter received a communication from Grant saying he intended to attack the whole of the enemy's works at 10 A. M. the next day, and asking the admiral to shell the batteries from 9.30 P. M. until 10.30 A. M. The mortars were playing rapidly on the town and works all night, and the "Benton," "Mound City," and "Carondolet" went up and shelled the water batteries and other places where troops might find rest. At 7 A. M. the "Mound City" crossed the river and attacked the hill batteries opposite the canal. At eight o'clock Porter joined her with the "Benton," "Tuseumbia," and "Carondolet," and all the vessels opened on the hill batteries and finally silenced them. The "Benton," "Mound City," and "Carondolet" then closed with the water batteries, leaving the "Tuseumbia"—out of repair—to keep the hill batteries from firing on the vessels after they had passed by. The water batteries opened furiously, supported by a hill battery on the starboard beam of the vessels. The ironclads advanced to within 280 yards and returned the fire without cessation, the enemy's fire being accurate and incessant. The vessels having been engaged an hour longer than Grant requested, and all having received shots under water which could not be stopped while under way, withdrew in a cool and handsome style. After dropping back, it was found the enemy had taken possession again of one of the lower hill batteries and was endeavoring to remove his guns, and had mounted a 12-pounder field-piece to fire at Gen. McArthur's troops that had landed a short time before. The "Mound City" and "Carondolet" drove them off in a few minutes.

On May 27, Porter, at the urgent request of Gen. Grant and Gen. Sherman, being led to believe the enemy had removed his guns to the land side, fitted the "Cincinnati" for the occasion by packing her with logs and hay, and sent her down to shell some works retarding the progress of the army. At 8.30 the "Cincinnati" left her anchorage and stood for the position assigned her. The enemy fired rapidly from all their guns, including those that were supposed to have been removed to the land side. The fire was very accurate, striking the "Cincinnati" almost every time, and passing entirely through her protection of iron, hay, and wood. Finding his vessel would sink, Lieut. Bache ran up stream as far as circumstances would allow, ran his vessel ashore, and succeeded in saving his wounded. She sank within range of the enemy's batteries; but her fire, until the magazine was drowned, was effective. Lieut. Bache received the thanks of the Department for his conduct on this occasion. On the night of June 19 Porter was notified by Grant that he intended to open a general bombardment on the city at 4 A. M. and continue it until ten o'clock. Commander Woodward, of the "General Price," received orders from Porter to move up with the "Mound City" and "Benton" and attack at the specified time. Lieut.-Com. Ramsey was given charge of a 100-pounder rifle, a 10-inch gun, and a 9-inch gun, fitted on scows, and placed them after midnight close to the point opposite Vicksburg protected by the bank. At the appointed time all the shore batteries opened fire, and also the guns on the scows and the mortars. A little later the gunboats opened a heavy fire, advancing all the time and throwing shells into all batteries along the hills and near the city. There was no response; the batteries were all deserted. At ten o'clock the vessels and mortars ceased firing. The mortar boats had bombarded the enemy's works for forty days continuously.

On July 4 Vicksburg surrendered to Gen. Grant. On June 7, Porter, learning that the enemy, about 4,000 strong, were about to attack Milliken's Bend, where military stores were kept, guarded by two colored regiments and part of the Twenty-ninth Iowa, the "Choctaw" and "Lexington," under Lieut.-Com. Ramsay, had been dispatched to protect them. The enemy attacked before daylight. The colored troops met the onset courageously, and a company of the Iowa regiment stood their ground until they were slaughtered to a man, killing an equal number of the enemy. The fight was desperate, and the troops overpowered were driven behind a bank near the water's edge, pursued by the enemy; but when the gunboats opened fire with shell, grape, and canister, the enemy fled in wild confusion. On the fall of Vicksburg Porter received letters of congratulation from Sherman and the Navy Department, acknowledging the powerful co-operation of the navy under his command and its great services during this memorable campaign. The fall of Vicksburg is referred to by Sherman in his terse style as a "victory won by the united navy and army of our country." Porter was made a full rear-admiral, to date from July 4, 1863, the day Vicksburg surrendered.

In March, 1864, Rear-Admiral Porter was ordered to co-operate with Gen. Banks in an expedition up Red river to Shreveport. Gen. Banks, having been defeated, was obliged to retire to Grand Ecore, leaving Porter and his vessels caught above the falls at Alexandria. From this perilous situation they were rescued by Col. Joseph Bailey, of the engineers, who constructed a dam across the river above the falls and enabled the fleet to escape.

On Sept. 22, 1864, Porter was ordered to relieve Acting Rear-Admiral S. P. Lee, commanding the North Atlantic squadron, whose ground of operation was between Cape Fear river and Wilmington, N. C. Porter arrived off Fort Fisher on Dec. 24, with 35 cruisers, 5 ironclads, and a reserve of 19 vessels. Eight thousand soldiers in transports, under command of Gen. B. F. Butler, accompanied the fleet. Porter opened fire on Fort Fisher on the day of his arrival, and, as he says in his official report, "In one hour and fifteen minutes after the first shot was fired not a shot came from the fort. Two magazines had been blown up by our shells and the fort set on fire in several places, and such a torrent of missiles was falling into and bursting over it that it was impossible for any human being to stand it. Finding that the batteries were silenced completely, I directed the ships to keep up a moderate fire, in hope of attracting the attention of the transports and bringing them in." Gen. Butler, however, having examined the fort, thought it "substantially uninjured as a defensive work by the naval fire," and returned to Hampton Roads without making an assault. The ships, thus deprived of military co-operation which was necessary for the reduction of the work, went to Beaufort, N. C., where Porter began preparations for another attack, and wrote to Gen. Grant: "Send back the same soldiers with another general, and we will capture Fort Fisher." With this request Gen. Grant complied. The troops, now under the command of Gen. Alfred H. Terry, returned to Fort Fisher, and were landed by the boats of the fleet on Jan. 13, 1865, and the fleet again bombarded. On Jan. 15 the soldiers assaulted the fort from the rear, and, aided by an attack of the naval brigade on the sea-face and by the heavy fire of the fleet, captured the fort after seven hours of hard fighting. For his efforts on this occasion Porter received the thanks of the President and Congress and a vote of thanks from the State Legislatures. This was the fourth vote of thanks given him during the war.

After the fall of Fisher, Porter proceeded, with one monitor and all his light-draught gunboats, to the attack of Fort Anderson, a strong work up Cape Fear river, which he reduced on Feb. 18, 1865. He next directed his movements to Fort Strong, a battery commanding the obstructions in the river. This work he soon rendered harmless, and he then passed the obstructions without opposition. He appeared with his fleet off Wilmington on Feb. 22, 1865, and this closed the last Southern port to supplies from abroad.

Porter's next move was to City Point, where he kept a portion of his fleet during the operations against Richmond. Rear-Admiral Semmes, of the Confederate fleet, hearing the fire of the

gunboats at Dutch Gap, imagined the Federal ships to be approaching in force, and destroyed all his own vessels, with their equipment.

After the fall of Richmond, Porter escorted the President to that city with his light gunboats, having rendered the last important naval service of the war.

Porter returned to Washington to receive the homage due to his achievements. It was well for the country that he should have been in the beginning of the war at the seat of Government, to advise and assist in shaping the naval policy. In all this he was closely associated with Gustavus V. Fox, formerly an officer of the navy, a man of great ability, who was one of the assistant secretaries of the navy. When Porter was presented to Lincoln, with the remarkable faculty the President possessed of reading character, he took in the proportions of the man, and through the terrible strife advised with Porter in all matters pertaining to the navy more than with any other officer. Long before the outbreak of the war, when the mutterings of the storm alone were heard, but daily growing in strength until the strife seemed inevitable, the navy, with the exception of some of Porter's seniors, hailed him as the coming man who was to lead them to victory. He was thoroughly equipped in all branches of his profession, a man of great energy and of an invincible courage, and known to possess a large and varied experience, such as is only to be acquired in actual warfare, and the great results that he accomplished show the transcendent qualities of the man.

For several years Porter was engaged on the Coast Survey, and he thus acquired an experience that proved to be of great value, which he turned to good account during the civil war, when every man in command had to be his own pilot. This experience enabled him to take the vessels composing Farragut's fleet over the bar of the Mississippi river, and to bring them to an anchor in the river below the forts preparatory to the grand attack. Especially valuable was this knowledge in carrying out his plan of attack on Fort Fisher; every ship, in accordance with the programme, moved into its berth, which was no sooner taken up than fire was opened upon the fort. This was Porter's crowning achievement, and brought forth in the strongest light the splendid qualities of a great naval captain. He was gifted with singular prevision in planning enterprises of moment. No detail was insignificant in his judgment. When the time for action came, he found his vessels ready in all respects to respond to his call. As an organizer he was unexcelled. In all of his operations every emergency was considered and provided for. It was in times of the gravest peril that his qualities as a leader were most manifest, and, cool, calm, and self-collected, he brought victory from defeat and order from confusion.

Porter was appointed Superintendent of the Naval Academy, Sept. 9, 1865, and retained charge until 1869. He was commissioned vice-admiral July 31, 1866; on a mission to Santo Domingo in 1866; on special duty at the Navy Department in 1869-70; commissioned admiral Aug. 15, 1870; on special duty at Washington from 1870 until his death.

Admiral Porter had an appreciative knowledge of music and the arts, and was a good linguist and a ready writer. His history of the navy has received high commendation from both European and American military critics. He was a man of medium height, and possessed of immense strength; this he turned to good account when on several occasions he was attacked by roughs during his early life. Few men could stand before him. His voice was low, pleasing, and well modulated, and the fine lines of his face and figure enhanced his charms of manner and conversation. He was always popular with the reliable element among both his officers and men, who would follow him under all circumstances to any destination. During his residence in Washington, while he was admiral of the navy, no house was more eagerly sought than his, and no one dispensed hospitality with a more lavish hand or a more agreeable effect. He left a widow (the daughter of Commodore Daniel T. Patterson), two daughters, and four sons. He was given a grand military funeral, when the President and Cabinet and representatives of both services united to do honor and pay the last tribute of respect to one of the greatest naval commanders of this or any other age. He is buried at Arlington among the nation's dead. His published works are: "Life of Commodore David Porter" (1875); "Allan Dare and Robert le Diable," a romance (1885); "Incidents and Anecdotes of the Civil War" (1885); "Harry Marline" (1886); and "History of the Navy in the Rebellion" (1887).

PORTUGAL, a monarchy in southern Europe. The legislative power is vested in the Cortes Geraes, consisting of the House of Peers and the House of Deputies. The upper house, under the law of July 24, 1885, abolishing life peerages, when this law goes into complete operation will consist of 100 peers appointed for life by the King, of the 50 elective peers, who are chosen indirectly, and of the peers who still hold seats by virtue of birth or office, viz., princes of the blood royal and the 13 continental bishops. There were 52 hereditary peers still living in 1891. The members of the popular Chamber are elected for four years by the direct suffrage of Portuguese citizens of full age who are fathers of families or have an income of 100 milreis and can read and write. There are 168 Deputies for the Continent and the Azores and Madeira, and 12 for the colonies. The reigning King is Carlos I, born Sept. 28, 1863, son of Luis I and Pia, daughter of Vittoria Emanuele. He married Marie Amalie, daughter of Philippe of Orleans, Count of Paris, in 1886, and succeeded to the throne at the death of his father, on Oct. 19, 1889. The Cabinet formed on Oct. 12, 1890, was composed as follows: President of the Council and Minister of War, João Chrysostomo de Abreu e Souza; Minister of the Interior and Minister *ad interim* of Public Instruction and Fine Arts, Antonio Candido Ribeiro da Costa; Minister of Marine and the Colonies, Antonio Ennes; Minister of Commerce, Agriculture, Industry, and Public Works, Thomas Ribeiro; Minister of Finance, Mello Gouveia, who retired and was succeeded by Augusto da Cunha; Minister of Justice, Correo da la Brandão; Minister of Foreign Affairs, Barbosa Bocage.

Area and Population.—The area of continental Portugal is 32,528 square miles, and of the Azores and Madeira or Funchal 1,510 square miles. The population in 1881 was 4,708,178. There are a large number of gypsies in Portugal, and in the coast towns about 3,000 negroes. In the south there is a considerable admixture of Jewish and Arab, and of Dutch, French, and English blood. The number of marriages in 1888 was 34,097, against 34,323 in 1887; the number of births was 163,963, against 165,914; the number of deaths was 107,455, against 108,552. The number of emigrants was 16,923 in 1887, and 23,981 in 1888.

Finances.—The ordinary receipts for 1887-'88 were 39,731,254 milreis (the milreis = \$1.15), the extraordinary receipts were 1,109,185 milreis, and there was a surplus brought down of 7,702,863 milreis, making the total receipts 48,543,302 milreis. The ordinary expenditure amounted to 38,244,042 milreis, and the extraordinary to 6,003,714 milreis, making a total of 44,247,756 milreis, which left a surplus of 4,295,546 milreis. In four years about 22,000,000 milreis of new debts had been made. In 1888-'89 no sums were raised by credit, while the receipts fell to 37,891,835 milreis, and at the same time the ordinary expenditures of 39,165,358 milreis was supplemented by 11,526,273 milreis of extraordinary expenditure, making the total expenditure 50,681,631 milreis. In the revised budget for 1889-'90 the receipts from all sources were set down as 50,860,000 milreis, and the expenditures as 51,311,132 milreis. At the beginning of 1890-'91 the funded debt was 533,316,612 milreis, in addition to which 45,910,000 milreis had been raised by treasury warrants in the preceding four years, and there was a floating debt of 24,832,159 milreis. In 1890 a loan of 9,300,000 milreis was obtained in Paris, and treasury bills were issued to the amount of 16,500,000 milreis. The revenue for 1890-'91 was estimated at 40,962,694 milreis from ordinary sources, and the ordinary expenditure at 42,861,117 milreis, in addition to which 2,506,500 milreis were required for extraordinary purposes. In the budget for 1891-'92 the total revenue is estimated at 42,967,468 milreis, of which 7,157,400 milreis are derived from direct imports, 3,957,000 milreis from registration and stamped paper, 23,505,800 milreis from indirect taxes, 2,155,500 milreis from supplemental duties, 4,072,012 milreis from government property, and 2,119,750 milreis are *recettes d'ordre*. The total expenditure is estimated at 46,822,072 milreis, of which 27,742,818 milreis are for the Ministry of Finance, 1,285,240 milreis for the Ministry of the Interior, 1,007,564 milreis for the Ministry of Worship, 5,294,046 milreis for the Ministry of War, 2,537,444 milreis for the Ministry of Marine and the Colonies, 485,240 milreis for the Ministry of Foreign Affairs, 4,711,234 milreis for the Ministry of Public Works, 1,417,721 milreis for the Ministry of Public Instruction and the Fine Arts, 62,465 milreis for the Savings Bank, and 2,378,300 milreis for extraordinary purposes.

The Army and Navy.—The law of 1884 makes the peace establishment consist of 24 regiments of infantry, 12 of chasseurs, 10 of cavalry, 3 of mounted artillery, 1 brigade of mountain artillery, 1 regiment and 4 batteries of fortress artillery, and 1 regiment of engineers. The

soldiers, who are recruited in part by conscription and in part by enlistment, serve in the active army three years. The number of men to be maintained is fixed from year to year by the Cortes. The peace effective for 1891 of the permanent army was 2,089 officers and 25,658 men, with 3,985 horses and mules. There were, in addition, 79 officers and 2,176 men in the municipal guards, and 178 officers and 4,791 men in the fiscal guards. The war effective is estimated at 4,000 officers and 150,000 men, with 23,000 horses and 264 guns. About half of these are trained soldiers. There are maintained, in addition to the home army, the colonial forces, which number 8,880 officers and men, exclusive of the native troops.

The fleet, in 1891, consisted of 1 armored corvette of 3,200 horse-power, carrying 9 guns; 6 corvettes, having a total of 48 guns; 24 gunboats, with 76 guns; 5 torpedo boats; 2 armed transports; and 3 other steamers, besides 13 sail vessels. The navy in 1891 had 256 officers and 4,360 sailors, besides 400 in the colonies.

Commerce.—The special imports of merchandise in 1890 were in total value 44,423,593 milreis, and the special exports 21,536,299 milreis. The imports of precious metals were 14,534,500 milreis, and the exports 10,538,825 milreis. The values of the principal articles of importation were as follow: Cereals, 3,991,000 milreis; machinery and instruments, 3,443,000 milreis; cotton goods, 3,145,000 milreis; iron, 2,512,000 milreis; coal, 2,096,000 milreis; woollens, 2,085,000 milreis; sugar, 2,030,000 milreis; raw cotton, 1,892,000 milreis; railroad material, 1,784,000 milreis; codfish, 1,747,000 milreis; chemicals, 1,453,000 milreis; wool, 1,436,000 milreis; animals, 1,421,000 milreis; timber, 1,151,000 milreis; hides and skins, 1,142,000 milreis; silks, 1,116,000 milreis. The chief exports and their value were: Wine, 10,898,000 milreis; cork, 3,114,000 milreis; fish, 1,016,000 milreis; copper, 1,016,000 milreis. Minor articles of export are animals, figs, and onions.

Navigation.—There were 3,720 steamers of 4,932,000 tons, and 2,390 sailing vessels of 356,000 tons, entered in 1890, exclusive of coasting vessels. The departures numbered 3,701 steamers of 4,922,000 tons, and 2,680 sailing ships of 354,000 tons. The merchant navy, not including small coasting and fishing vessels, contained 67 steamers of 108,601 metric tons, and 486 sailing vessels of 101,711 metric tons.

Railroads, Posts, and Telegraphs.—There were 2,149 kilometres of railroads in operation and 155 kilometres under construction on Jan. 1, 1891. The Beira Baixa Railroad, in the construction of which through the mountains great engineering difficulties were overcome, was opened on Sept. 5, 1891. The postal traffic in 1889 was as follows: Domestic letters, 19,965,000; international letters, 5,185,000; postal cards, 3,907,000; printed matter, 22,118,000 pieces; money transmitted by letters or orders, 3,466,000 francs. The state telegraphs have a total length of 5,606 kilometres, with 13,011 kilometres of wire. The number of internal dispatches in 1887 was 628,329, and of foreign dispatches 477,117. The receipts from the postal service were 5,707,477 francs, and from the telegraphs 1,035,797 francs.

Military Revolt.—A Republican faction called the Federal Group Union, having for its aim the establishment of a federal republic embracing the Iberian peninsula, encouraged by Spanish Republicans who pursue the same idea, took advantage of a feeling of discontent bordering on insubordination that existed among the non-commissioned officers of the army to incite a part of the Oporto garrison to revolt on Jan. 31, 1891. The petty officers were dissatisfied because the law for the advancement of men from the ranks to officers' grades was defeated by the conferring of all the commissions on graduates of the military schools. The smallness of their pay afforded another grievance. Several of them had been punished or reduced to the ranks for manifesting their discontent. In communication with the Federal Group, a large number of sergeants agreed to start a mutiny in the garrisons, which was to be the signal for the proclamation of the republic and a civil insurrection. Though the Republicans are numerous and influential, they are not harmonious. The leaders of the important groups had nothing to do with the revolutionary plot. The Government got wind of it, and was able to take measures in time to prevent a rising in all the towns except Oporto, where the movement originated. In the early morning of Jan. 31 the Ninth Regiment of chasseurs left its barracks and went to a camping-ground, where it was joined by the Tenth Infantry, led by Capt. Leitao and Lieut. Coelho, and by a regiment of the fiscal guards and 150 of the foot guards. They marched together, after breaking into the barracks of the Eighteenth Infantry to enable mutineers in that regiment to join them, to Praco Dom Pedro, their numbers being swelled by large crowds of civilians. Taking possession of the town hall, they constituted a provisional government, composed of Dr. Alves de Veiga, Rodrigues Freitas, Gen. Correia da Silva, Azevedo Leite, and Pinto Leite. The loyalty of the municipal guards prevented them from getting possession of the city before troops could arrive from Lisbon. When the guards fired on a body of insurgents many fled in terror, while others fought bravely until they were dislodged. A larger force of insurgents made a second attempt to ascend the Rua San Antonio, in order to seize the palace of the civil governor and cut the telegraph wires. They were driven back, and while the municipal guards and the loyal part of the Eighteenth Regiment picketed various streets, the rebels occupied the municipal palace. The municipal guards surrounded the building, which was bombarded for two hours and nearly destroyed by a brigade of artillery which arrived with two cannons, after which the municipal guards made a bayonet charge and overpowered the defenders in a desperate fight. Returning with their prisoners to the barracks, they had another fight with the insurgent guards within. The disturbance began at three in the morning and was quelled before four in the afternoon. There were 50 killed and over 200 wounded during the *émeute*. The "Republica Portuguesa," organ of the Federal Republicans, was confiscated, the other Republican papers of the country were suppressed, and all Republican and Socialist clubs were closed. The mutinous regiments were disbanded. Mar-

tial law was proclaimed, to enable the civilian participants in the rising to be tried by court martial. More than 200 sergeants were implicated. The proceedings began on Feb. 25. There were about 502 soldiers tried and 22 civilians. Dr. de Veiga, the political leader, escaped to France. Capt. Leitao, Lieut. Coelho, Verdial, Souza, Santos Cardozo, and Joao Chazas were sentenced to solitary confinement from two to six years, followed by transportation from six to ten years. All the sergeants were sentenced to four years' cellular imprisonment and six years' transportation. On April 9 the arrest of some law-breakers, who were supposed by the populace to be Republicans, was followed by a riotous outbreak that could only be suppressed by a bayonet charge of the soldiery.

Financial Crisis.—The Government of Portugal, owing to party rivalries and revolutionary dangers, abstained from imposing fresh taxes to meet the growing expenses, and borrowed money constantly for current needs, until the public debt amounted to more *per capita* than that of Great Britain, and the interest charges consumed half the public revenue. The total indebtedness rose from about \$400,000,000 in 1875 to nearly \$700,000,000 in 1890, an advance from \$87 to \$135 *per capita*. For this there was little to show except the 505 miles of Government railroads, 780 miles of heavily subsidized railroads belonging to companies, and the costly new harbor at Lessa, which is unsafe. The competition of German manufactures compelled Portuguese factories to close; severe agricultural distress was felt; the banks were drained of their cash reserves for payments abroad and advances to the Government and to the railroads, the receipts of which had greatly fallen off; the returns from investments in Brazil, on which Portugal usually relies for the money to carry on the commercial operations at home, were suddenly stopped by the Brazilian crisis; socialistic, agrarian, and Republican agitation confronted the Government and disturbed confidence; the treasury was bankrupt unless relief came from abroad, and the money market of London, which had helped the Government out of former difficulties, was closed by the Anglo-Portuguese dispute, while Berlin bankers showed no disposition to come to the rescue. In 1890 an attempt was made to float a loan in Paris, which was defeated by certain holders of bonds of the usurping Government of Don Miguel, repudiated after the restoration of Donna Maria, who demanded full payment, and raised a public outcry against lending to a country that had defrauded Frenchmen. In December a strong group of Paris bankers made an arrangement by which 75,000,000 francs were advanced, and afterward Senhor Carvalho, acting as agent for the Government, made new terms with them, by which they agreed to raise the authorized loan of 250,000,000 francs on the security of the tobacco monopoly, which the Portuguese Government promised to transfer to a board of managers composed of Frenchmen and Portuguese. As the monopoly brings in 22,500,000 or 25,000,000 francs a year, there would be an excess of about 8,500,000 francs to be covered into the Portuguese treasury. The syndicate offered to buy off the Miguel bondholders by giving 2,500,000 francs

for their worthless bonds. The 75,000,000 francs were used to pay off the most pressing of the floating obligations and to relieve the banks. The Cortes were convoked on Jan. 2, but were adjourned till April 2 after hearing the King's speech, in which the ministers promised to consolidate the floating debt by means of the 75,000,000 francs, without having recourse to further credit operations, and to arrive at a financial equilibrium by measures of economy so as to avoid the imposition of fresh taxes. The gravity of the financial situation was not apparent even to the ministers, who expected to establish the finances on a sound basis by the operation concluded in Paris, and who were preoccupied with the dispute with Great Britain, which had caused a change of ministry at every stage of the negotiations, and with the Republican agitation. Before the Cortes met some of them foresaw a monetary crisis, and asked to be strengthened by the admission of men whose influence and standing would strengthen the Cabinet and help to terminate the dispute with Great Britain, and to revive confidence in the national credit. In the middle of April the Minister of Public Works and the Minister of the Interior offered their resignations, but were induced to remain. The subscriptions for the tobacco loan were opened in April, and the amounts taken by French and German bankers gave the ministers fresh courage. But bear speculators and Republicans attacked the new loan, causing the price to drop from 430 to 350 francs for 500-franc bonds, and rumors of the bankruptcy of the Government and the credit institutions of Portugal caused people to withdraw their deposits from the banks in gold. Men thrown out of work by the stoppage of factories the Government offered to transport with their families to the colonies in Africa, and to find work for them there. On May 8 a run on the banks was begun, against which such a precaution was futile. The Banco Lusitano, which had already exhausted its resources by coming to the assistance of the Royal Portuguese Railroad Company, closed its doors on May 10. The Government came to the aid of the other banks by issuing a decree authorizing the redemption of notes in silver, and ordering the coinage of 2,000,000 milreis. This proved unavailing, and on May 11 a *moratorium*, or general suspension of payments, but not of accruing interest, for sixty days was decreed for the relief of banks, companies, and individual debtors.

Change of Ministry.—On May 15 the Cabinet resigned in a body after arranging the basis of a convention with Great Britain that was highly honorable for Portugal, since Lord Salisbury, impelled by a fear that the English people, who have many millions invested in Portugal and are the chief holders of the debt, would not justify his contentions, and that British diplomacy would lose more than it would gain if he precipitated the political chaos and financial ruin that would follow the overthrow of the Portuguese dynasty, abandoned his claim to the region of the middle Zambesi (see CAPE COLONY). Count San Januario was called upon to form a mixed Cabinet, but abandoned the undertaking because he could not get the Conservatives and Progressists to agree on the question of elections. Serpa

Pimental failed in an attempt to organize a ministry, and the King sent for the retiring Premier, who succeeded on May 21 in getting one together which was composed as follows: President of the Council and Minister of War, Gen. João Chrysostomo d'Abreu e Sousa; Minister of Foreign Affairs, Count de Valbom; Minister of the Interior, Lopo Vaz; Minister of Finance, Marianno Carvalho; Minister of Justice, Moraes Carvalho; Minister of Marine and the Colonies, Julio de Vilhena; Minister of Public Works, Franco Castellobranco. Four of the ministers were Conservatives, or *Regeneradores*, and the rest were Progressists. The programme of the new Cabinet consisted in a liberal and tolerant policy: the commutation of sentences passed on political offenders, greater liberty of the press, the reduction of the number of officials and lowering of salaries, and the conclusion of commercial treaties to stimulate trade and production. The colonies were to be opened to chartered companies, thus increasing their productive capacity and relieving the home Government of heavy expenses. Senhor Carvalho went immediately to Paris, where he arranged for the payment of the coupons of the debt due in July, October, and January. The price of Portuguese *vente* rose. The minister obtained the means for continuing the harbor works at Lisbon on a less ambitious scale, and rescued from bankruptcy by inducing the directors to abandon the controlling interest that they had secured in three Spanish railroads, and making a large secret advance to them of Government funds, concealing even from his colleagues this transaction. The Portuguese investments in Brazil, amounting to \$550,000,000, were still depreciated by 33 per cent. through the fall in exchange, but the large hoards of gold, estimated at \$67,500,000, began to return to circulation, and bank notes were taken more freely, relieving slightly the monetary stringency. The Cortes reassembled on May 30. The issue of small notes was authorized, and the export of silver coin was prohibited. The English treaty was ratified without cavil. A loan of \$8,000,000 was authorized for the purchase of silver for ordinary currency. A Government monopoly of alcohol was approved, and the sale of watches and lotteries were made monopolies, and from these sources an increase of revenue of 2,000,000 milreis was expected to be realized. The extraordinary expenditure for 1891-'92 was fixed at 2,240,000 milreis. The effective of the army was reduced to 22,000 men, and 3,000 recruits were dismissed to their homes. All payments of state officials by fees were abolished, and the maximum salary was fixed at 2,600 milreis, even for officials filling more than one place. The tobacco bonds signed for, but for which the Portuguese banks could not pay, were taken by French banking houses. The monetary crisis not being over when the *moratorium* expired on July 10, the Bank of Portugal, which had authority to issue bank notes to the amount of about \$30,000,000, was absolved for three months longer from the obligation to redeem its notes in money. The recall of troops from Africa on the conclusion of the English treaty permitted a reduction of the army by 8,000 men, saving 3,000,000 milreis a year. The transfer of sovereign rights in East Africa to chartered companies was expected to

save 700,000 milreis; and an increase of about 300,000 milreis in the revenue from Guinea and Angola was obtained by a revision of the tariffs.

Colonial Possessions.—The Portuguese colonies in Asia, comprising Goa, Domao, and Diu, in India, Macao, in the China Sea, and the Indian Archipelago of Timor and Kambing, have a total area of 7,923 square miles, and a population of 881,000. The possessions in Africa are the Cape Verde Islands, 1,650 square miles in extent, with 110,926 inhabitants in 1885; the Guinea protectorate, 14,200 square miles in extent; St. Thomas's and Prince's islands, 454 square miles in area, with a population of 21,037; Angola, Ambriz, Benguela, Mossamedes, and the Portuguese Congo, having an aggregate area of 501,500 square miles, and an estimated population of 19,400,000; and the state of East Africa, 300,000 square miles in extent, with about 1,000,000 inhabitants. The total ordinary revenue is estimated in the colonial budgets for 1891-'92 at 3,784,869 milreis, the ordinary expenditure at 3,910,105 milreis, and the extraordinary expenditure at 785,080 milreis. The imports of Angola in 1888 were valued at 2,405,569 milreis, and the exports at 2,116,487 milreis; imports of Cape Verde at 214,650 and exports at 301,791 milreis; imports of Guinea at 21,087 and exports at 51,004 milreis; imports of St. Thomas at 823,643 and exports at 275,621 milreis; imports of Goa at 24,839 and exports at 28,445 milreis. The imports of Mozambique in 1890 were £141,493 in value, and the exports £90,374; while at Delagoa Bay the value of the imports was £613,805, and of the exports £2,211. The chief exports of the East African colonies are oil, nuts and seeds, caoutchouc, and ivory. There were 208 kilometres of completed railroad, 370 kilometres under construction, and 428 kilometres of telegraph line in Angola in 1891; in East Africa there were 88 kilometres of railroad completed, 689 kilometres projected, and 370 kilometres of telegraphs; in India there were 82 kilometres of railway and 53 kilometres of telegraphs. The troops in the colonies consisted of 1,193 regular officers and soldiers and 8,283 colonial troops of the first line. The Delagoa railroad dispute was referred to Switzerland for arbitration as to the indemnity to be paid to the American and English *concessionnaires*. The Government decided to have the road completed by private contract. In West Africa a dispute arose concerning the railroad from Loando to Ambaca, which an English construction company undertook to build. The Portuguese company which acquired the concession annulled the contract, and the contractors, who had constructed a part of the line, claimed damages. The natives of the Bissagos islands, off the coast of Portuguese Guinea, rose in rebellion against the authorities in the early part of 1891, overpowered and massacred the garrison, and hoisted the French flag. Troops sent from the mainland against the rebels, who numbered 6,000, were defeated, 4 Portuguese officers and several hundred native levies being killed, and a stronger force had to be brought from Angola to re-establish Portuguese authority. The delimitation of the boundary between British and Portuguese territory in Manica, East Africa, was carried out by a joint commission. The agreement for the delimitation of the spheres of Portugal and of

the Congo State in Munto Yamvo, signed on May 23, 1891, was approved by the Cortes.

PRESBYTERIANS. I. Presbyterian Church in the United States of America.—

The comparative summary of the statistics of this Church for the past five years, as published by the stated clerk of the General Assembly, gives the following results:

	1887.	1891.
Synods.....	23	30
Presbyteries.....	201	216
Ministers.....	5,654	6,223
Number of ruling elders.....	21,831	24,475
Number of deacons.....	7,085	7,880
Churches.....	6,436	7,070
Added on examination.....	53,886	59,650
Total communicants.....	697,385	806,796
Number of adults baptized.....	20,114	21,576
Number of infants baptized.....	28,469	26,121
Members in Sunday school.....	771,521	888,680
<i>Contributions:</i>		
Home missions.....	\$75,070	\$995,625
Foreign missions.....	669,891	784,406
Education.....	117,898	154,518
Sunday-school work.....	38,437	131,915
Church erection.....	286,057	860,944
Relief fund.....	110,339	116,573
Freedmen.....	103,404	124,814
Aid for colleges.....	127,627	16,190
Sustentation.....	26,419	63,117
General Assembly, etc.....	62,324	75,449
Congregational.....	7,902,164	9,764,879
Miscellaneous.....	866,762	1,326,696
Total.....	\$11,098,622	\$14,062,356

The Board of Home Missions reported to the General Assembly that its total receipts for all purposes had been \$957,907. Its permanent funds amounted to \$225,590. It supported 1,677 missionaries and 340 missionary teachers, who returned a total church membership in the mission stations of 113,420, with 156,262 in the congregations, 10,683 added on profession of faith, 2,452 Sabbath schools with 173,169 members, and 438 Sabbath schools organized during the year. One hundred and thirty-nine churches had been organized. In the educational department were 36 schools among the Indians, 34 among the Mormons, 30 among the Mexicans, and 18 in the South, which returned in the aggregate 340 teachers and 7,932 pupils. The Woman's Executive Committee had received \$338,847. The committee had secured pledges from societies and individuals of \$66,000 for the support of 140 mission teachers, and of \$56,000 for 717 scholarships in the various schools.

The Board of the Church Erection Fund had received \$126,642. Applications had been made during the year for aid to 190 churches and 52 manses, in the total sum of \$145,113. Appropriations had been made for 173 church buildings and 42 manses in the amount of \$116,550. One hundred and seventy-four churches and manses had been completed without debt, securing property to the amount of nearly \$400,000.

The total receipts of the Board of Publication in its Sabbath-school and Missionary Department for its current fund had been \$97,352. It presented reports of 7,117 Sabbath schools, with 947,337 members. The accounts of the Publication House were balanced at \$659,817.

The receipts of the Board of Education had been \$106,600. Its invested permanent funds amounted to \$75,280, and had yielded an income

during the year of \$4,410. The number of candidates aided had increased from 839 to 869.

The income of the Board of Relief had been \$155,154. It had upon its roll the names of 659 families relieved by it.

The Board of Aid for Colleges and Academies had received \$89,303, and reported that \$57,084 besides had been given directly to its institutions. It had paid \$15,287 of debts on property. The 15 colleges and 21 academies under its care returned \$1,173,278 of property, and 3,858 students, 152 of whom had the ministry in view.

The Board of Missions to the Freedmen had received \$155,078. Its invested funds amounted to \$53,820. The colored people had given during the year toward the support of the Church \$45,581. There were connected with the board 14 white and 120 colored missionaries, and 52 white and 168 colored teachers. Seven new churches had been organized, making the whole number now under the care of the board 252, with 17 missions in addition; 1,296 members had been received on profession of faith; and three were now 15,486 communicants, with 18,212 pupils in 259 Sunday schools. There were 84 schools for instruction in all elementary branches, with 197 teachers and 11,029 pupils.

The Board of Foreign Missions had received \$942,690. The receipts of the women's boards and societies had been the highest ever reached by them. The missions among the Seneca, Nez Percé, and Dakota Indians, in Mexico, Guatemala, United States of Colombia, Brazil, Chili, West Africa, India, Siam, China, Japan, Corea, Persia, and Syria, and among the Chinese and Japanese in the United States returned in all 210 American and 366 native ministers as missionaries, 388 American and 1,055 native lay missionaries, 377 churches, 28,494 communicants, with 2,875 additions during the year, 605 schools, with 27,813 pupils, 25,926 pupils in Sabbath schools, 160 students for the ministry, and \$49,423 of contributions by the native churches.

General Assembly.—The General Assembly met in its one hundred and third annual session in Detroit, Mich., May 21. The Rev. Prof. W. H. Green, of Princeton Theological Seminary, was chosen moderator. The Committee on the Revision of the Westminster Confession made a report embodying an account of its proceedings, a draft of the changes it recommended to have made in the Confession, and an explanation of the principles by which it had been governed in proposing them. The draft of the changes presented the modified articles in full as they would read after the alterations were made. The changes proposed are numerous, and include verbal alterations, the elimination of phrases with or without the substitution of others, the omission of single articles, and the insertion of new articles and new chapters. Those of most general interest are the ones that embody modifications of forms of doctrinal expression.

Among them are the incorporation in the chapter "On the Holy Scriptures" of a clause asserting the truthfulness of the history and the faithful witness of prophecy and miracle; a recasting of the chapter "On God's Eternal Decree," with the omission of parts of it, the insertion before the words "but to ordain them to dishonor" of the words "not to elicit everlasting life" and the addition of the words "yet so as thereby neither is any limitation put upon the

offer of salvation to all upon condition of faith in Christ, nor is restraint laid upon the freedom of any one to accept this offer"; the new reading in the chapter "Of Creation," "the heavens and the earth, with all that they contain, were made by him in six creative days"; in the chapter "Of the Fall of Man, of Sin, and the Punishment thereof," the reading "Opposite to all that is spiritually good," and the addition of the words, "Nevertheless, the Providence of God and the operations of His spirit restrain unregenerate men from much that is evil, and lead them to exercise many social and civil virtues"; the reading in the chapter "Of God's Covenant with Man," "offereth by his Word and Spirit"; the insertion of new chapters entitled "Of the Work of the Holy Spirit" and "Of the Universal Offer of the Gospel"; in the chapter "Of Free Will," instead of "altogether averse from that good," the new reading "altogether indisposed to that good," and the addition of the words, "Yet is his responsibility as a free agent not thereby impaired"; in the chapter "Of Effectual Calling" the modified readings "who is altogether passive in the act of regeneration, wherein," and "All infants (for elect infants) dying in infancy, and all other persons who, from birth to death, are incapable of being outwardly called to the ministry of the Word, are redeemed by Christ and regenerated by the Spirit, who worketh when, and where, and how he pleaseth"; also, "Yet inasmuch as they never truly come to Christ they can not be saved; neither is there salvation in any other way than by Christ through the Spirit, however diligent men may be in framing their lives according to the light of nature and the law of that religion they do profess"; the omission in the chapter "On Justification" of the words "they have, not of themselves, it," so that the clause shall read "which faith is the gift of God"; the insertion in the chapter "Of Good Works" of the words "and while their neglect of such things is sinful and displeasing unto God," before the words "Yet because they proceed not from a heart purified by faith"; the reading in the chapter "Of Religious Worship and the Sabbath Day," "Prayer is to be made for all things lawful; for the forgiveness of all sins except the sin unto death; and for all sorts of men living or that shall live hereafter; but not for the dead"; the reading in the chapter "Of the Church," "There is no other head of the Church but the Lord Jesus Christ, and the claim of the Pope of Rome to be the vicar of Christ and the head of the Church Universal is without warrant in Scripture or in fact, and is a usurpation dishonoring to the Lord Jesus Christ"; in the chapter "Of Church Censures" the insertion of the words in italics, so as to make the reading, "whereof they have *ministerial and declarative* power respectively to retain and remit sins." Modifications were also proposed in the language of certain clauses referring to the Roman Catholic Church, its doctrines and practices.

The report was accepted, to be sent down to the presbyteries for their action and the consideration of the next General Assembly in the light thereof. The Committee on the Subject of a Consensus Creed reported that it had addressed a letter to the several Reformed Churches throughout the world holding the Presbyterian system, inviting them each to appoint a committee of correspondence, with a view to the consideration and preparation "Of a short creed containing the essential articles of the Westminster Confession, to be used as a common creed of those churches—not as a substitute for the creed of any particular denomination, but to supplement it for the common work of the Church." The Committee on the Proof Texts of the Confession of Faith and the Larger Catechism reported, submitting the collation of texts which it had made, and recommended, in view of the

pending consideration by the Assembly of the subject of revision of the Confession, that it be continued.

The standing Committee on Theological Seminaries reported upon overtures from 63 presbyteries which had been referred to them concerning the utterances of the Rev. Charles A. Briggs, D. D., contained in the address which he delivered on the occasion of his induction into the chair of Biblical Theology in the Union Theological Seminary, New York (see below). Some of the presbyteries recommended specific action on the part of the Assembly, but the majority of them invited, in general terms, such action as the Assembly might deem it best to take. The committee found that the General Assembly had authority to veto the appointment of professors in the Seminary, but must exercise its right at the next session after the appointment is made. It was resolved, by a vote of 440 to 60,

That in the exercise of its right to veto the appointment of professors in the Union Theological Seminary, the General Assembly hereby disapproves of the appointment of the Rev. Charles A. Briggs, D. D., to the Edward Robinson professorship of Biblical Theology in that seminary by transfer from another chair in said seminary.

A committee was appointed to confer with the directors of the Union Theological Seminary in regard to the relations of the seminary to the General Assembly.

The Committee on Church Unity reported, and upon its recommendation was discharged from the further consideration of the subjects of interdenominational comity and Church unity; and its name was changed to the Committee on the Federation of the Protestant Denominations of the United States. It was decided that the seal of the General Assembly should bear an open Bible as its central symbol. Upon hearing the report of the committee appointed to canvass the votes on the overture respecting deaconesses, which had been submitted to the presbyteries by the General Assembly of 1890, stating the facts recited in the resolution, the Assembly resolved that, whereas some presbyteries had answered the overture as a whole, and some had answered its proposed amendments as if they were two independent overtures, in its judgment the overture was defeated in both its amendments; but whereas the answers seemed to indicate a desire to secure godly and competent women to assist in deaconesses' work, and readiness to invest persons of this class with official character, and in view of the difficulties with which the subject was environed and of prevailing differences of opinion, a committee was appointed to consider the subject and ascertain from the answers already given, as far as possible, the desire of the Church, and to prepare an overture to be presented to the next General Assembly. Attention was called to the declarations of past General Assemblies on the subject of worldly amusements; a warning was uttered against progressive euchre, social dances, and private theatricals as new forms of the amusements therein condemned; and in general terms the Assembly called upon all members of the Church "so to regard their obligations to Christ as to see to it that they take no part in amusements which they can not take in his name."

The organization of young people's societies for Christian culture and work was commended. The disposition prevalent in the denomination to work for temperance within the lines of the Church was approved; members were urged to make their lives a quiet rebuke to any evil indulgences fostered by fashion; the efforts of the Christian women of the country in behalf of temperance were commended; and a representation was ordered sent to the United States Senate in favor of the participation of the United States in joint action by the powers against the traffic in slaves and liquor in Africa. A proposition favoring an exhibit at the Columbian World's Fair of the influence of religion on civilization was approved of; and a request was ordered made of the directors of the fair that they decide at once that its doors shall not be opened to the public on Sunday.

The Case of Prof. Briggs.—The address of Prof. Charles A. Briggs, which formed the subject of the most earnest debates in the General Assembly, was delivered by him on the occasion of his installation into the Edward Robinson professorship of Biblical Theology in the Union Theological Seminary, New York. This was a new professorship which had been founded and endowed by the Hon. Charles Butler. Prof. Briggs, who had for many years occupied the chair of Hebrew in the same seminary, was chosen to fill it, and was installed into it on Jan. 20. After making the subscriptions required of professors in Presbyterian seminaries, and receiving the charge, he delivered an address on "The Authority of the Scriptures," of which he furnished a syllabus to the public journals.

In this address he affirmed that historically there are three great fountains of divine authority—the Bible, the Church, and the reason. The majority of Christians have from the apostolic age found God through the Church. Other means used by God to make himself known were defined as the forms of reason, the metaphysical categories, and conscience and the religious feeling. There are those who would refuse rationalists a place in the company of the faithful, but they forget, the speaker held, that the essential thing is to find God; and if these men have found God without the mediation of the Church and the Bible, Church and Bible are means, not ends; they are avenues to God, not God. The speaker regretted that these rationalists depreciate the means of grace so essential to most of us, but we are warned lest we commit the same error, and depreciate reason and the Christian consciousness. Protestant Christianity builds its life and faith on the divine authority contained in the Scriptures, and is charged with too often depreciating the Church and reason. Men are influenced by their temperaments and environments which of the three ways of access to God they pursue. As obstructions which have been thrown up by the follies of men to each of these avenues, Prof. Briggs spoke of traditions, formalities in phrase and expression, and views of doctrine which, having become habitual and crystallized, have been invested with erroneous meanings and need to be discarded or modified. Of a true biblical theology, the most prominent feature is theophany. The institutions of the Old Testament religion become for all ages and for all men the appropriate symbols of the universal religion. The God of the Bible is one God—a Being high above the best scheme of philosophical theism and the most skillful constructions of the systematic theologian. The favorite divine attribute of the Old Testament and the New is the attribute of

mercy, with love transcending human powers of conception. The doctrine of man in the Bible is a divine doctrine, presenting sinful man in the midst of an original innocence and an ultimate perfection, with sin as only a temporary condition. Redemption is born of the love of God. As taught in the Bible it aims to remove all the ills that flesh is heir to; it comprehends the whole process of grace; it is a fault of Protestant theology that it limits redemption to this world. "Progressive sanctification after death is the doctrine of the Bible and the Church. The bugbear of a judgment immediately after death and of a magical transformation in the dying hour should be banished from the world, and we should look with hope and joy for the continuance of the process of grace and the wonders of redemption in the company of the blessed to which we are all hastening"; the biblical redemption is the redemption of our race. "The Bible does not teach universal salvation, but it does teach the salvation of the world and of the race of man; and that can not be accomplished by the selection of a limited number from the mass." There is ample room for criticism in the ethical precepts and in the conduct of the holy men of the Bible. But the greatest sin against the Bible has been the neglect of the ethics of Jesus. The Messiah is the culmination of the Old Testament. The exposition of the theology thus briefly outlined closed with a demonstration of the harmony of all the sources of authority.

The Presbytery of New York, with which Prof. Briggs's direct ecclesiastical relations lie, in April, 1891, appointed a committee to consider his inaugural address in its relation to the Confession of Faith and the action it would be proper to take upon it. The committee reported in May, comparing the expressions of the address with the doctrinal statements of the Confession, and recommending that the committee enter at once upon the judicial investigation of the case. This report was adopted, with the resolution recommending investigation as against a minority report advising that no judicial proceedings be entered upon. The board of directors of the seminary addressed a list of questions to Prof. Briggs framed with a view of testing his doctrinal soundness on the particular points involved; upon receiving his replies to which, the Directors declared

That this board has listened with satisfaction to the categorical replies rendered by Dr. Briggs to the questions submitted to him, and that it trusts that the manner in which he has therein dealt with the points that are in dispute will operate to correct the misapprehensions that are current and to quiet the disturbing condition of mind in which, as a communion, we are so unhappily involved.

Prof. Briggs's associates in the faculty of the seminary published a statement in which, while they recognized and deprecated the dogmatic and irritating character of his utterances in his inaugural address and other writings, they averred that they did not recognize, even in these, any warrant for persistent misrepresentations of his views, and for the style and temper in which, they said, in many cases, he had been assailed; and they proceeded to show that the expressions objected to could be explained consistently with orthodoxy and the Westminster Confession. At a special meeting held after the action of the General Assembly, on June 5, the board of directors resolved that, after having taken legal advice and after due consideration, they saw no reason to change their views on the subject of the transfer of Dr. Briggs, and felt

bound, in the discharge of their duty under the charter and constitution of the seminary, to adhere to the same.

II. Presbyterian Church in the United States (Southern).—The following is a summary of the statistical returns of this Church as made to the General Assembly in May. The summary for 1887 is added to show the growth of the church in five years:

ITEMS.	1887.	1891.
Synods.....	13	18
Presbyteries.....	69	71
Candidates.....	267	371
Licentiates.....	57	66
Ministers.....	1,116	1,186
Churches.....	2,336	2,453
Churches organized.....	39	81
Ruling elders.....	6,981	7,679
Deacons.....	5,070	5,863
Added on examination.....	12,145	11,024
Total communicants.....	159,398	174,065
Adults baptized.....	4,214	8,853
Infants baptized.....	5,090	5,300
Baptized non-communicants.....	84,163	85,363
Teachers in Sunday schools.....	12,021	15,972
Pupils in Sunday schools.....	98,806	117,419
<i>Contributions:</i>		
Sustentation.....	\$42,944	\$57,574
Evangelistic.....	42,434	75,772
Invalid fund.....	11,921	15,398
Foreign missions.....	67,204	105,368
Education.....	39,250	44,778
Publication.....	9,081	9,211
Colored evangelization.....	4,152	8,988
Church erection.....	.....	80,057
Bible cause.....	.....	4,592
Presbyterial.....	13,754	14,865
Pastors' salaries.....	616,583	717,360
Congregational.....	453,977	619,273
Miscellaneous.....	114,015	114,590
Total.....	\$1,415,318	\$1,517,335

The Committee on Education of the Ministry reported to the General Assembly that it had received during the year \$21,461, and had aided 229 candidates. The Tuscaloosa Institute for colored ministers had been attended by 21 Presbyterian and 2 Methodist students—smaller numbers than in the preceding year. The decrease was due to the facts that better opportunities were provided elsewhere for the education of colored ministers, and that stricter rules of attendance had been imposed at the institution.

The Committee of Publication had received for benevolent work \$10,816, and in royalties from Sabbath-school papers \$3,093, while the net income from the publishing house had been \$2,455. The concern was valued at \$85,295 over all liabilities. Fifteen colporteurs had been employed, and had distributed \$8,807 worth of books.

The Committee of Home Missions had received \$79,842. Aid had been given, in the Sustentation department, in 221 cases; in the Church Erection department, in the erection of 32 buildings; from the Evangelistic fund and in Indian missions, in the support of 64 ministers, for 1 woman missionary to the Indians, and for 2 teachers at the Male Orphan Academy in the Choctaw nation where 56 orphans are cared for; from the Invalid fund, to 154 cases; and from the colored Evangelistic fund, in the support of Tuscaloosa Institute, and in the support of 1 white and 31 colored ministers and evangelists. There were now 4 colored presby-

teries, with 22 ministers, 86 churches, and perhaps 1,000 communicants, and several licentiates and Sabbath schools. The General Assembly declared that it was the deliberate and settled policy of the Church to aid in the establishment and development of a separate and ultimately self-sustaining colored Presbyterian Church.

The Committee of Foreign Missions had received \$112,951. Twelve new missionaries had been sent out, and 19 were under appointment. The missions were in Brazil, Japan, China, Mexico, the Congo Free State, and Turkish Greece. The churches of the mission in Greece proper had become part of the Evangelical Church of Greece.

General Assembly.—The General Assembly met at Birmingham, Ala., May 21. The Rev. H. C. Du Bose, D.D., was chosen moderator. The *ad interim* Committee on the Directory of Worship reported the result of its labors in the revision of that book, and it was sent down to the presbyteries for adoption or rejection. The committee appointed by the General Assembly of 1890 to invite the representative bodies of other churches to unite in petitions to the civil governments of the world to settle international difficulties without arms reported progress. Many of those bodies had yet to meet for the first time after receiving the invitation. Many of the bishops of the Protestant Episcopal Church had replied approving of the movement, and saying that they would lay the overture before their respective diocesan conventions. The Southern Baptist Convention had adopted the petition and appointed a delegate to the conference. Favorable answers had been received from the Methodist Episcopal Church and the Congregational Union of England and Wales. The action of the General Assembly in 1890 on temperance having been misunderstood by some persons, a new resolution was adopted declaring that the Church bore testimony against the traffic in intoxicating liquors as a fruitful source of abounding iniquity and misery, and advising the people to use all means which might be approved by their Christian consciences and judgment to remedy the evil throughout the land. Especially would it urge members to abstain from intoxicating liquors as a beverage. A pastoral letter was ordered sent down to all the churches calling attention to the evil of Sabbath desecration by travel, driving, social visiting, and excursions for pleasure on Sunday by members, and urging them "to such observance of God's holy day as becomes His people." The following minute was adopted concerning the participation of women in public services:

It is the settled doctrine of our Church that women are excluded from licensure and ordination by the plain teaching of the Scriptures, and therefore can not be admitted to our pulpits as authorized preachers of the Word; and also that they are prohibited from speaking by way of exhortation or leading in prayer or discussing any question publicly in the meetings of the church or congregation as a mixed assembly. This is according to the mind of the Spirit as expressed by St. Paul in I Cor. xiv. 34, 35, and I Tim. ii. 11, 12. But we do not hold that Christian women are prohibited from holding meetings among themselves for mutual edification and comfort by pious conversation and prayer, or to devise ways and means to aid the general branches of Church work, such as

home and foreign missions, etc., or to teach a class in the Sabbath school. Work of this kind we approve and commend, but public speaking in the promiscuous assembly of the congregation or church is contrary to the holy oracles, and therefore should be prohibited and condemned by the presbyteries and Church sessions.

The Assembly declared it unlawful to grant the use of church buildings to Universalists for holding religious services.

III. United Presbyterian Church in North America.—The following is a comparative summary of the statistics of this Church for 1860 and 1891:

ITEMS.	1860.	1891.
Presbyteries.....	48	59
Pastors and stated supplies.....	884	591
Total ministers.....	447	782
Ministers ordained.....	80	80
Students of theology.....	85	73
Ruling elders.....		8,578
Total congregations.....	674	902
Pastoral charges.....		717
Mission stations.....	101	170
Members received on profession.....	8,778	7,482
Total members.....	52,781	106,885
Infants baptized.....	4,940	4,054
Adults baptized.....	875	1,718
Number of Sabbath schools.....		1,027
Officers and teachers.....		10,408
Pupils.....		98,848
Contributions of Sabbath schools.....		\$11,403
Ladies' missionary societies.....		844
Young peoples' societies.....		524
Salaries of ministers.....	\$159,401	\$521,280
Average salary of pastors.....		\$1,018
Contributions for—		
Congregational purposes.....		\$347,467
The boards.....	\$33,522	\$211,502
General purposes.....	\$59,391	\$65,738
Number of churches.....		815
Seating capacity.....		268,805
Value.....		\$5,036,764
Number of parsonages.....		220
Value.....		\$445,172

The receipts of the Board of Church Extension were reported as \$28,711; the payments to congregations had been \$38,589. Appropriations had been made to 24 congregations and missions to the amount of \$41,332. During the past ten years the amount paid by the board for churches and parsonages, exclusive of contingent expenses, had been \$304,592, an average of \$34,459 a year. The Board of Education returned 59 beneficiaries. There were in the colleges 65 instructors and 1,058 students.

The receipts of the Board of Home Missions had been \$56,442, and the expenditures \$60,639. Aid had been granted to 219 stations, of which 207 stations reported an average attendance of 16,527 persons, 12,538 communicants, 1,244 additions by profession of faith, and 1,432 teachers and 15,428 pupils in Sabbath schools. The receipts of the Board of Foreign Missions had been \$105,116. From the missions in Egypt and India were returned 26 ordained, 33 other foreign workers, 260 native laborers (in Egypt), 39 organized and 164 unorganized stations and congregations, 9,828 communicants, 145 schools with 10,347 pupils, 201 Sabbath schools with 7,559 pupils; in India, 410 additions by profession of faith, 392 baptisms of adults and 291 of infants, and a total Christian population of 10,171.

The General Assembly met in Princeton, Ind., May 26. The Rev. T. J. Kennedy, D. D., Presi-

dent of Amity College, Iowa, was chosen president. A committee appointed by the previous General Assembly concerning the relations of this Church with the Presbyterian Alliance reported recommending a resumption of them; whereupon the Assembly resolved that, as assurances had been given by the Secretary of the Alliance "that any departure from the use of the Scripture Psalms in the devotional meetings thereof was not by its authority, and that such departure will be carefully guarded against in the future meetings," it declared its desire to be readmitted to the Alliance. It declined to take any part in the preparation of a consensus of the faith of the Presbyterian churches of the world, on the ground "that it is not wise to do anything that might indicate a willingness to modify our creed." A minute adopted on the subject of the demission of the ministry declares

That every one who rightfully occupies the ministerial office has been called to that position by the voice of Christ, the Head of the Church; and that ordination by the presbytery is an official act, setting a man apart to the office to which it is judged the Lord has called him. The evidences on which a presbytery bases its judgment are the possession of natural, acquired, and gracious endowments, fitting the candidate for the office; leadings of Providence guiding him in that direction; and a persuasion apparently wrought in the man's soul that he is called of God to this office. It is possible that the man may be mistaken in his conviction concerning the call of the Lord, and a presbytery may also be mistaken in its judgment of the matter, "so that a man may come into the ministry by the mistakes of man, and not by the will of God." Or, a man who has been called by the Lord for a time may become by some providence—not of old age or infirmity—entirely and permanently unfitted for the duties of his office, while left free to serve the Lord in those duties for which he is capable. In such cases the presbytery may release the man from his act. But when unfitness results from the minister's neglect to cultivate his talents or his yielding to the allurements of the world, he can not properly be released without censure.

As a part of a course of evangelistic training, a Bible institute was provided for the benefit of members of the Church desiring to fit themselves for Christian labor, the course of instruction in which shall embrace the English Bible, the plan of salvation, the distinctive principles of the United Presbyterian Church, and methods of Christian work. In view of the usual omission of the name of Christ from the official proclamations appointing Thanksgiving Day, the Assembly directed the preparation of a special proclamation, recognizing the Thanksgiving Day appointed by the President, to be read from the pulpits of the Church in place of the President's proclamation. Petitions were ordered sent to the directors of the Columbian Fair for the entire closing of the exhibition on Sunday.

IV. Reformed Presbyterian Church (Synod).—The following is a summary of the statistics of this body as they were reported to the Synod in May: Number of congregations, 127; of ministers, 123; of elders, 503; of deacons, 347; of communicants, 11,272; average attendance in Sabbath schools, 13,011; number of baptisms during the year, 363. Amount of contributions: For foreign missions, \$26,151; for home missions, \$6,559; for the Southern Mission, \$3,962; for the Chinese Mission, \$2,087; for the Indian Mission, \$4,521; for sustentation, \$2,590; for national reform, \$4,520; total

contributions, including congregational and other, \$216,407. The Synod held endowment funds to the total amount of \$244,043.

The Synod met in Pittsburgh, Pa., May 27. The Rev. R. C. Wylie was chosen moderator. The report of the Committee on the Signs of the Times included a review of the growth of the Synod and its enterprises since 1871, when the covenant was adopted throughout the whole Church. The number of members had increased from 8,868 to 11,289 in 1890, or 27 per cent.; and the total amount of contributions had risen from nearly \$170,000 to nearly \$240,000, or 41 per cent. Every work in which the Church was engaged in 1871 was still prosecuted with unabated zeal and over an extended area, while the new missions among the Chinese and among the Indians had been added. The invested funds of the Synod, which amounted in 1871 to less than \$50,000, were reported in 1890 to be more than \$241,000. The case of six ministers who had been suspended by the Presbytery of Pittsburgh for violation of the discipline of the Church came before the Synod on appeal. The specific offense with which these ministers were charged was that of having signed, in July, 1890, a paper called the "East End Declaration," in which it was held that "persons who make a credible profession of Christ should be received into church fellowship on the acceptance of our testimony and terms of communion without binding them to our explanation in the matter of political dissent and other questions"; and this after the Synod had directed that there should be no more agitation on the subject. The ministers, both when on trial before the Assembly and on the presentation of their appeal, declared that they had not purposed to be disorderly or to violate the law of the Church forbidding its members to vote in civil elections, but only favored a change in the law of the Church. The Synod, in the case of five of the ministers, refused to entertain the appeals, and dismissed them. In the case of the sixth minister the appeal was sustained. A number of the members of the Synod protested against this action and declared that they would leave the Church. The Synod resolved to co-operate with the Southern Presbyterian and other churches in the address of a memorial to the governments of Christendom in behalf of the cause of peace, and committed its members to a personal pledge, that if any part of the Columbian Exhibition were opened on the Sabbath they would not attend it, would not give it countenance or support, and would use their influence to persuade all Christian people to unite with them in like practical protest against "such a national dishonoring of the Sabbath and of the Lord of the Sabbath."

V. Reformed Presbyterian Church. (General Synod).—The General Synod of the Reformed Presbyterian Church met in Philadelphia, May 21. The Rev. William H. Gailey was elected moderator. Report was made of the condition of the foreign mission in India with stations at Roorkee, Muzaffarnagar, and Puttiala. The amount of the Church Extension fund was returned at \$4,933. The receipts and expenditures of the Disabled Ministers' fund had been \$487, while other sums had been sent directly

by different churches to the beneficiaries. The total permanent investment, including the Endowment and Lamb funds, amounted to \$55,474. A minute was adopted with reference to the difficulties in the Reformed Presbyterian Synod, to the effect that

Anything affecting the interests of theological education in the Reformed Presbyterian Church enlists our consideration. Events occurring among our former brethren, acting under the same name, we fear, justify us in expressing regret that so many defections have occurred among our graduates, and that so many of theirs have been silenced by suspension from exercising their ministry. It is gratifying to find that there are so many among them in sentiment with us. We would desire to hope that the reunion for which our fathers prayed and hoped was near at hand.

A protest was adopted against opening the Columbian Exhibition on Sunday.

VI. Cumberland Presbyterian Church.—The General Assembly met in Owensborough, Ky., May 21. The Hon. E. E. Beard, of Lebanon, Tenn., was chosen moderator. In reply to an overture from the Presbyterian Church (North) inviting it to join in the preparation of a consensus creed of the Reformed Churches holding the Presbyterian system, a declaration was adopted:

1. That while the Cumberland Presbyterian Church has the "Presbyterian system," it does not accept the "Westminster Confession" or its creed.

2. That thus standing, it is willing at all times to enter into correspondence with other Churches holding the "Presbyterian system" in any effort to unite upon a short creed to be used as the common creed of these Churches.

A committee was appointed to enter into correspondence with other Presbyterian committees with a view to the consideration and preparation of such a creed "provided that nothing contained in the creed to be thus proposed shall conflict with the Confession of Faith of the Cumberland Presbyterian Church," with the additional stipulation that the action of the committee should have no binding force or effect till it was approved by the General Assembly. To a communication inviting it to join in asking the political conventions to insert a recognition of Jesus Christ in their platforms, the Assembly resolved that it was not expedient for the Church to interfere directly in politics. Majority and minority reports were presented on the question of "rotation in the office of elders," or the election of elders for terms of years, the majority report declaring against rotation, and the minority report in favor of it. The majority report was adopted. A declaration was approved that a woman can not legally be elected a ruling elder. The report on Temperance condemned all license, and declared that the legalized liquor traffic has its existence because of the will of the people expressed at the ballot-box, and can be outlawed by the will of the people expressed at the polls, and that Cumberland Presbyterians ought not to exercise their privileges as citizens in such a way that their votes shall be inconsistent with their prayers. The report on the Sabbath included a protest against opening the Columbian Exhibition, or any part of it, on Sunday. The receipts of the Board of Missions had been: For foreign missions, \$22,259, of which \$10,169 had been contributed through the

Woman's Board; for home missions, \$11,450; total receipts, including those for Church erection and other receipts, \$43,871. The mission at Osaka, Japan, had 16 missionaries (men and women), 16 native laborers, 10 churches with 623 communicants, 1 school with 100 pupils, and returned 63 additions. The mission in Mexico returned 2 stations, 4 missionaries, 8 native helpers, 1 church with 9 members, and 3 schools with 198 pupils.

VII. Presbyterian Church in Canada.—

The statistical returns of this Church, as presented to the General Assembly in June, show that the number of churches and stations under pastoral supply was 1,769, or 151 less than in the preceding year; of sittings in churches, 461,520; of families connected with congregations and stations, 88,389; of single persons not connected with families in congregations, 14,439; of communicants, 160,102, showing an increase of 2,112; of additions during the year on profession of faith, 10,128; attendance on Sabbath schools, 127,890. Total income of the Church, \$2,002,810, with \$59,483 in addition raised on the mission stations. The contributions for home missions amounted to \$30,000 in the eastern section and \$111,988 in the western section. Services were held in 1,056 stations, in which 12,569 Presbyterian families were represented, besides others not connected with the Church. One hundred and ninety-three congregations had been aided by the Augmentation fund to the extent of \$33,786 in raising the salaries of their pastors to not less than \$750 per annum. The income of the French Evangelization fund had been \$58,000. Its work, including colportage, mission schools, preaching stations, and regularly organized churches, had been done chiefly in the Province of Quebec, but extended also to portions of the maritime provinces, Ontario, and St. Anne, Ill. Ninety-three stations were served. The receipts for foreign missions, including the balance from the preceding year, had been \$87,186, in addition to which the woman's foreign missionary societies had provided \$40,000. Missions were in operation in the New Hebrides, Trinidad, China, and Central India, and among the Indians in the Northwest. The Mission Committee had \$8,000 on hand for the foundation of a mission to the Jews, and recommended that steps be taken at once to establish such a mission in Palestine.

General Assembly.—The General Assembly met in Kingston, Ontario, June 10. The Rev. Thomas Wardrope, D. D., of Guelph, was chosen moderator. The returns from the presbyteries of their votes on the overture prescribing that "the discipline of the Church shall not be exercised in regard to marriage with a deceased wife's sister or a deceased wife's niece," showed that the overture had been defeated. The Assembly declared upon this that "the matter should now take end." An overture providing that students in Presbyterian colleges be allowed to prosecute their studies during the summer season was sent down to the presbyteries. Regulations were adopted concerning the course of instruction in the colleges, one of the provisions of which contemplates a service of one year in the mission field before settlement of the candidate. The report on temperance asserted the

conviction of the Assembly "that in the matter of legislation nothing short of prohibition rigidly enforced by the proper authorities should ever be accepted as final or satisfactory, and that it is the duty of the Dominion Parliament to enact such a law." The Assembly further approved of temperance organizations in the Church similar to that working in the Church of Ireland, and directed that local church authorities see that the principles of temperance are properly advocated in the public schools. The value of Young People's or Christian Endeavor societies was discussed, and the Assembly resolved "that in order to develop their Christian graces the young people be thoroughly organized for Christian work." The subject of a "consensus creed" was referred to a committee composed of the delegates appointed to attend the Presbyterian Council. The report of the Committee on Civil and Religious Rights recommended that to counteract the effects of the growth of ultramontaniam, the people everywhere should be educated in both secular and religious matters to think and act for themselves as the Christian law requires; and ministers should take frequent occasion to instruct their people on this subject, and inform them fully regarding "ultramontane errors." Respectfully acknowledging the receipt of a memorial on the labor question, the Assembly expressed sympathy with every wise effort "to develop the faculties of man, to improve his social conditions, to redress injustice, and to effect needed reforms," and, trusting that any evil in the condition of different classes of the community might as far as possible be met and removed, expressed the conviction that they could only be permanently met and removed by the application of the principles of the Gospel of Christ.

VIII. Free Church of Scotland.—The General Assembly met in Edinburgh, May 22. The Rev. Prof. Thomas Smith was chosen moderator. The Committee on the Confession of Faith reported that it had determined that the best plan of procedure in the case was to consider a declaratory act, and accordingly reported such a bill, which declares, in substance,

That in holding and teaching the divine purpose of grace, the Church earnestly proclaims as standing in the forefront of the revelation of grace the love of God—Father and Son and Holy Spirit—to sinners; that all who hear the Gospel are warranted and required to believe to the saving of their souls; that the Confession is not to be held as teaching that any who die in infancy are lost, or that men are foreordained to death irrespective of their own sin; or that man's whole nature is so corrupt but what there remain "tokens of his greatness as created in the image of God."

A minute was adopted that

The Assembly approve generally of the report, and return their thanks to the committee, especially to the convener. They approve of the proposed form of a declaratory act, and resolve to send it down to presbyteries as an overture under the Barrier act. . . . The General Assembly have seen with satisfaction that the Committee on the Confession of Faith, after repeated conference, have been led to adopt unanimously a resolution in regard to holy Scripture. The Assembly approve of the resolution, and, regarding it as reasonable and fitted to be helpful, they adopt it as their own as follows, viz.: The General Assembly find that there appears to be no adequate

call to add a declaratory statement to the clear and comprehensive exhibition of the doctrine of holy Scripture contained in the first chapter of the Confession. At the same time, in view of the anxiety expressed in regard to the Church's position on this subject, the Assembly cordially avail themselves of the opportunity of recording their full and steadfast adherence to the doctrine laid down in the Confession as to the great truths of the inspiration, infallible truth, and divine authority of holy Scripture as proceeding from God, who is the author thereof.

The Committee on the Quinquennial Visitation of Colleges reported that representations had been made to the visitors at the New College of the manner in which the classes in natural science and evangelistic theology were conducted, and on examination they had concluded that inquiry was needful. Similar representations in reference to the chair of Evangelistic Theology were made to the visitors at Glasgow and Aberdeen, and inquiry was found needful also at those schools. Complaint was likewise made of the principal at Glasgow. Among the particular matters mentioned in the complaint was the allegation that the complainants left the hall (at Glasgow), "after attending the classes of the Professor of Old Testament Exegesis, without hearing in these of the existence of the great problems raised by modern criticism in that department, and wholly unable to deal with them, and almost untaught in the interpretative criticism of the text." A special commission of seven ministers and seven elders was appointed to make a full and deliberate inquiry into these statements, and report to the next Assembly. Upon the presentation of the report of the Committee on Church and state, a resolution was adopted, declaring

That the Assembly are still persuaded that the termination of the connection of Church and State now existing in Scotland is essential in order to the attainment of the results which are desired, and while they deeply regret any sentiment of estrangement which meanwhile may arise in connection with the frank and free expression of opinion on this head, they are constrained to declare their judgment that a just, honorable, and permanent settlement can not be obtained on other terms.

The committee was reappointed.

To overtures asking for a more definite expression by the Assembly with reference to the case of Profs. Dods and Bruce (see "Annual Cyclopædia" for 1890), the Assembly replied that they "do not deem it necessary to take any further action in reference to the matters referred to in the overtures, and accordingly pass from them." A report was adopted favoring more extended co-operation with the United Presbyterian Church, particularly in the matter of avoiding competition in movements for church extension. The Assembly voted to petition Parliament

To devote a portion of the funds accruing to Scotland as Scotland's equivalent to the grant made in behalf of the relief of fees in English schools, to the completion of the relief of fees in the elementary schools, to the improvement and extension of the secondary and technical school system, and to the better equipment of the universities.

The subject of improving congregational music was referred to a committee, which was also empowered to entertain any proposal for co-operation with other Presbyterian churches with

the view of promoting uniformity in the hymnals in use in the different churches. The subject of preparing a manual of prayer for use in family worship was also referred to a committee.

The total receipts for foreign missions had been £94,385. Including 35 agents of the ladies' societies and 33 missionaries' wives, the number of missionaries employed in India, Arabia, Syria, Africa, and the New Hebrides was 165, and the whole number of Christian workers was about 800. The number of native communicants was 6,895. Six hundred and ninety-six adults and 731 children had been added to the mission churches, and the catechumen classes returned 1,788 members. Six colleges and 307 schools returned 27,951 pupils of both sexes. The older vernacular missions had been reorganized, and evangelistic and medical work had been extended from new centers.

IX. Church of Scotland.—The General Assembly of the Established Church of Scotland met in Edinburgh, May 22. The Rev. James MacGregor, D. D., of Edinburgh, was chosen moderator. The Aged and Infirm Ministers' Committee reported that annuities amounting to £3,218 had been paid to about 40 annuitants. The income of the Colonial Committee had been £4,648. The income of the Jewish Missions' Committee had been £5,752, showing a slight falling off. The contributions for the work of the Committee on the Highlands and Islands had been £1,869, and the expenditures upon it £1,752.

A memorial signed by more than 450 ministers, seven of whom were Professors of Theology, asking that steps be taken to frame measures that would do away with the evils arising from competitive preaching in connection with the present method of selecting ministers, was referred to a committee to consider and report upon to the next General Assembly, with the understanding that the Assembly had no desire to interfere with the statutory right of the people to choose their own ministers. A report on the conduct of public worship and the sacraments recommended that the order of sequence for worship be indicated by the Assembly; that the use of the Lord's Prayer at every service be enjoined; that a table be prepared of readings and blessings, embracing every day of the year, for public worship; that sitting at prayer be disapproved of; that baptisms, except on special occasions, be public; that a burial service be sanctioned for use at the house and the grave; and that an optional liturgy be prepared for public worship and the sacraments. This report was recommitted, in order that its recommendations might be matured and put into shape. A petition for the institution of an inquiry into the right of the Glasgow University to allow Prof. Max Müller to lecture there on religion, or to entertain lectures on the Gifford foundation (which provides for lectures on the natural evidences of religion without preference for any system), was not entertained. A petition was presented from the Layman's League on the subject of increased co-operation among the Presbyterian churches in Scotland. The concurrence and sympathy of the Assembly with the objects and constitution of the League were expressed, and the Committee on Church Interests was authorized to receive, consider, and re-

port to the General Assembly any practical proposals toward reunion and the reconstruction of Scottish Presbyterianism which may be communicated to it.

X. United Presbyterian Church of Scotland.—The Synod met in Edinburgh, May 3. The Rev. Dr. Andrew Henderson, of Paisley, was chosen moderator. The condition of teaching and doctrine in the college hall was a prominent subject considered. Complaint having been made by the students of the inefficiency of one of the professors, a committee appointed at the preceding meeting of the Synod to inquire into the matter had taken the opportunity to examine the work of the college as a whole. The work of the principal was approved. In the professorship of Hebrew the committee suggested that the work might be widened, and more satisfaction given in teaching students to deal with those problems in recent discussions that must be fairly and intelligently and reverently dealt with. The complaints made by the students had borne chiefly against the teaching from the chair of the New Testament Exegesis; and this the committee found had been faulty from excess of merely grammatical comment, with insufficient treatment of the scope and purpose of the New Testament writings; absence of a regular course of instruction in New Testament introduction; incomplete statement and defective treatment of the special difficulties arising from modern criticism; besides some faults in detail and method. The College Committee was authorized to report to the Synod all complaints affecting the teaching of heresy within the college, and, in the event of its being decided that there was a case that demanded inquiry, to begin such processes as might be thought necessary.

The report on disestablishment renewed the testimony of the Synod in favor of religious equality, and expressed the conviction that union of the Presbyterian churches of Scotland could be effected only on the basis of freedom from State connection and support. The report on Sabbath observance mentioned the spreading tendency to secularize the day by fashionable entertainments and Sunday concerts, and the practice of ministers of traveling on Sunday by train or other hired conveyances to meet their appointments, as painful indications of disregard for the Lord's day. It had been found impossible to obtain, even among members of Parliament friendly to Sabbath observance, one who would introduce a bill for the diminution of Sabbath postal labor. An overture was received from a presbytery of Cape Colony in reference to extending missionary work into the new sphere of British influence extending north to the Zambesi.

The income of the Foreign Missionary Society for the year had been £32,303, and its expenditure £30,806. The report showed that the number of missionaries had gradually increased from 42 in 1860 to 63 in 1870, 80 in 1880, and 117 in 1890; and while the number of native congregations in 1860 was 35, with 4,695 members, it was now 96, with 15,799 members. In 1860 the native contributions amounted to £2,662, and in 1890 to £13,005. In 1860 there was 1 native minister, and in 1890 there were 20.

XI. Presbyterian Church in Ireland.—The statistical reports of this Church show an increase for the year of 57 communicants, 1,272 families, 1,196 stipend payers, 297 pupils in Sabbath schools, 11 ministers, 9 licentiates, and 1 student. The total income of the Church had increased from £222,626 to £239,188, or by £16,562. Ten thousand pounds sterling had been added to the Sustentation Fund. Reports were made to the General Assembly from the foreign missions in India and China, the Jewish, Continental, and colonial missions, and the Irish Home Mission. The capital of the Aged and Infirm Ministers' fund had been raised, by the aid of the Jubilee fund, to nearly £7,000.

The General Assembly met in Belfast, June 1. The Rev. N. M. Brown, D. D., was chosen moderator. The provisional arrangement made in 1886 concerning the use of instrumental music in church services having expired by limitation of five years, the subject again claimed attention. This arrangement provided that while congregations which already had instruments should be permitted to continue to use them, no more instruments should be introduced. The committee to which the subject was referred reported that the working of the arrangement had been satisfactory, and that while instruments had been disused in some congregations, none had been added. In accordance with the recommendation of the committee, the compact was renewed for another five years. The principles of temperance were represented as making a solid advance in the Church, with an exhibition of greater energy in promoting them, as well as an increasing number of abstainers, and a growing sentiment in favor of a closer restriction of the liquor traffic.

XII. Presbyterian Church in England.—The statistical reports of this Church, as presented to the Synod in May, show the number of members to be 65,688; of pupils in Sunday schools, 79,282, with 7,373 teachers; value of church property, £1,508,629. The income of the Church was returned at £239,284, against £234,805 in 1890.

The Synod met in London, April 27. The Rev. J. Monro Gibson, D. D., was chosen moderator. The Committee on the Confession of Faith, which had in the previous year asked the Synod to approve a revision of the articles of Faith (see "Annual Cyclopædia" for 1888), now presented for approval a draft of an appendix to the same, dealing with parts of the Confession—such as those relating to worship and baptism—which could not be defined as doctrine. A new formula was offered, to be signed by ministers and licentiates, requiring assent to the "body of doctrine" contained in the Confession, as set forth in the new articles of Faith. The appendix was referred to the presbyteries. A communication from the American General Assembly suggesting the preparation of a consensus creed was referred to the Committee on the Confession of Faith. A report was sent down to presbyteries giving to the presbytery authority, subject to appeal to the Synod, in case of inefficiency or unsuitability of ministers, after exhausting ordinary means of remedy, to dissolve the pastoral tie. With it was sent an overture arranging for visitation of congregations.

XIII. Welsh Calvinistic Methodists.—The statistical secretary of this denomination presented to the General Assembly a comparative review of the condition of the Church for several years past, partly in answer to assertions that had been made during the debates concerning disestablishment that the nonconformist churches in Wales were declining. So far as could be ascertained, the census returns showed an increase in the population of England and Wales during the past ten years of 11.54 per cent. The increase in the number of full members of this denomination was 14.40 per cent. The number of communicants in 1880 was 118,970; in 1890 it was 136,051, showing an average annual increase of 1,701. The increase for 1890 was 1,812, or 111 above the annual average. The total collections for 1890 were £202,707, while in 1880 they were £141,174, and in 1870 £108,564.

The General Assembly met at Morriston, near Swansea, June 22. The Rev. William James was chosen moderator. A committee was appointed to prepare a reply in the name of the Assembly to attacks that had been made upon the connection.

XIV. Australian Federal Assembly.—The fourth Federal Assembly of the Presbyterian Churches in Australasia was held in Brisbane, beginning July 9. The Rev. Dr. James Scott, of Hobart, was chosen moderator. The statistical report showed that there were 417 ministers in New South Wales, where the proportion of adherents to the whole population was 1 to 10, with 13,830 children in Sabbath schools; in Tasmania, 19 ministers and 174 teachers in Sabbath schools; in South Australia, 14 ministers and 250 teachers; in Western Australia, 2 churches; in Queensland, 42 ordained ministers and 26 missionaries, with 4,200 adherents; in Victoria, 210 ministers, with 3,300 teachers, 32,000 young people attending the schools and classes, and 67,000 adherents. A revision of the Directory for Public Worship was approved. The subject of a revision of the doctrinal standards was discussed, but no action was taken upon it. Action was taken toward the incorporation of the Presbyterian churches of the several Australian colonies into one. Recommendations were adopted with regard to the better oversight and strengthening of the missions in the New Hebrides. A new mission was provided for to be established among the aborigines on the Batavia river, in northern Queensland.

PRINCE EDWARD ISLAND. This island, with its area of 2,133 square miles, is the smallest province in Canada. It is, indeed, smaller than the neighboring island signory of Anticosti, which is almost uninhabited. The little island province is nevertheless the most densely peopled of any part of the Dominion. Its population, by the census of 1891, was 109,088, being at the rate of 54 per square mile.

Government.—Upon the acceptance of the chief justiceship by the ex-Premier Hon. W. W. Sullivan late in 1889 a sequence of complications ensued. Hon. Neil McLeod succeeded the Chief Justice as Premier; but, through the adverse voice of the electors, he was compelled to resign in April, 1891. A new ministry was then formed as follows: Hon. Frederick Peters, Attorney-General (Premier); Hon. Angus McMillan,

Provincial Secretary, Treasurer, and Commissioner of Public Lands; Hon. James R. McLean, Commissioner of Public Works; and Hons. Peter Sinclair, Alexander Laird, James Richard, Lawrence Kickham, Donald Farquharson, and George Forbes, without portfolio. Upon the meeting of the House, on April 23, Bernard D. McLellan was elected Speaker, and the Assembly was opened by the Lieutenant-Governor, who said:

I have much pleasure in meeting you again, and in availing myself of the advice and assistance in such legislation as may tend to promote the interests of the province. Although the lateness of your meeting must be attended with inconvenience to you, I rely with confidence upon your devoting sufficient time to mature such measures as the exigencies of the province and its public service may require. I was pleased to observe last autumn that a decided improvement was manifest in the manner of conducting the provincial exhibition, and trust that the husbandmen of this province may derive benefit corresponding to the exertions of the Charlottetown Driving Park and Provincial Exhibition Association. It is a matter of regret that the comparatively short crop of last year was damaged to a considerable extent by heavy rains during harvest, and as a consequence feed for farm stock has been scarce during the winter.

The public accounts for the past year will be laid before you. It is a matter of regret that the expenditure has largely exceeded the revenue, and as a consequence the indebtedness of the Government to the banks has been increased to such an extent as to necessitate the adoption of prompt measures for its settlement. The estimates for the current year will be submitted to you. They have been framed with due regard to economy and the efficiency of the public service.

Measures will be laid before you having for their object the lessening of the expenditure of the province without impairing the public service.

Financial.—In accordance with this speech the public accounts show that the receipts from all sources during 1890 amounted to \$224,881.69, while the expenditure was \$305,799.39. Of this total, \$110,536.28 were expended upon public works, for the most part of a permanent character. The estimates of expenditure for 1891 were \$270,905. One item in these estimates provides in part for the survey of a tunnel railway which is projected between the island and the mainland, a project of incalculable importance to the former. The session of 1891, being the second session of the thirty-first General Assembly, closed on July 15.

PROTESTANT EPISCOPAL CHURCH IN THE UNITED STATES. As in previous years, so in the present (1891), this church has moved on in its usual appointed course. In the free use of its liturgy and authorized services it has increased in a steady, healthful manner. There have been no disturbances or excitements over doctrine or discipline, and the position of the Episcopal Church, relatively to other denominations of Christians, in matters wherein there is divergence of doctrine and practice, remains the same. Christian union of an organic character, though earnestly desired, is still felt to be something in the future. The Prayer Book, as well as the conduct of public services, with more or less of ritual and its accompaniments, have been freely discussed, and there are unanimous desire and purpose to have doubtful points cleared up and agreement entered into as to matters yet requiring settlement. As the Gen-

eral Convention is to be held in 1892, it is highly probable, if not certain, that the conservative, law and order abiding sense of the fitness of things will prevail everywhere. The sources of information in preparing this article are the published journals of conventions, reports, and documents of Church societies and corporations, Pott's "Church Almanac," and Whittaker's "Protestant Episcopal Almanac." The following table presents a summary of statistics of the Church during 1891:

DIOCESSES.	Clergy.	Parishes.	Baptisms.	Communications.	Communicants.
Alabama.....	28	45	491	558	6,800
Albany.....	135	116	1,975	1,401	18,438
Arkansas.....	21	27	204	168	2,173
California.....	100	81	1,200	1,053	9,146
Central New York.....	108	112	1,541	1,050	15,774
Central Pennsylvania.....	115	110	1,539	1,120	10,870
Chicago.....	87	58	1,825	951	12,551
Colorado.....	40	35	529	440	3,795
Connecticut.....	200	147	2,093	1,559	26,640
Delaware.....	35	30	542	274	2,842
East Carolina.....	29	42	897	276	3,274
Easton.....	55	38	425	210	3,027
Florida.....	45	40	752	406	4,085
Fond du Lac.....	32	18	436	510	3,480
Georgia.....	39	40	468	310	5,551
Indiana.....	46	40	569	406	5,880
Iowa.....	56	50	627	382	6,266
Kansas.....	33	40	412	438	3,106
Kentucky.....	48	38	686	579	6,564
Long Island.....	120	85	2,538	1,558	23,072
Louisiana.....	38	44	597	441	4,498
Maine.....	27	22	850	174	3,168
Maryland.....	151	137	2,619	1,560	27,392
Massachusetts.....	202	135	8,057	1,585	28,021
Michigan.....	77	71	1,487	1,072	12,865
Milwaukee.....	62	38	668	437	6,623
Minnesota.....	95	73	1,134	901	10,422
Mississippi.....	22	35	267	232	3,066
Missouri.....	42	40	669	514	5,231
Nebraska.....	35	23	628	309	3,100
Newark.....	102	70	2,018	1,157	16,209
New Hampshire.....	36	34	304	228	2,894
New Jersey.....	107	80	1,414	878	18,164
New York.....	363	210	6,679	4,201	58,854
North Carolina.....	61	50	513	336	4,506
Oregon.....	74	74	1,017	750	9,802
Oleto.....	19	27	354	206	1,977
Pennsylvania.....	230	125	4,807	2,685	37,100
Pittsburg.....	63	75	1,249	1,001	9,923
Quincy.....	26	40	188	176	2,303
Rhode Island.....	56	49	1,140	617	9,575
South Carolina.....	46	62	459	386	4,801
Southern Ohio.....	56	49	619	460	5,528
Springfield.....	40	62	291	304	3,496
Tennessee.....	50	54	550	429	5,208
Texas.....	29	51	423	308	3,500
Vermont.....	32	46	398	304	4,461
Virginia.....	153	200	1,870	1,322	18,635
Western Michigan.....	27	28	511	348	4,232
Western New York.....	113	112	1,702	1,345	15,697
West Missouri.....	36	26	426	250	3,676
West Virginia.....	21	31	220	152	2,958
MISSIONARY JURISDICTIONS.					
Alaska.....	18	29	212	217	1,490
Montana.....	11	16	224	96	1,324
Nevada and Utah.....	5	18	73	32	617
New Mexico and Arizona.....	12	25	151	86	718
North Dakota.....	10	19	245	78	1,074
Northern California.....	13	25	135	152	1,984
Northern Texas.....	29	50	945	803	2,606
South Dakota.....	7	15	146	92	786
The Platte.....	28	22	375	224	2,392
Washington.....	21	22	186	80	1,600
Western Texas.....	34	20	225	182	1,565
Wyoming and Idaho.....	32	51	518	251	762
China.....	16	...	323	303	1,277
Japan.....	14	...	226	99	844
Western Africa.....	...	...	...	...	...
Total.....	4,203	3,800	60,460	40,972	532,230

Number of dioceses.....	79
Number of missionary jurisdictions.....	17
Bishops.....	75
Candidates for orders.....	355
Deacons ordained.....	164
Priests ordained.....	118
Priests and deacons.....	4,208
Whole number of clergy.....	4,278
Parishes (about).....	3,360
Missions and chapels (about).....	2,240
Baptisms, infant.....	47,138
Baptisms, adult.....	11,478
Baptisms, not specified.....	1,176
Total.....	60,460
Confirmed, number of.....	40,972
Communicants.....	532,230
Marriages.....	16,009
Burials.....	80,972
Sunday-school teachers.....	41,623
Sunday-school scholars.....	388,746
Contributions for Church purposes.....	\$18,400,000

Domestic and Foreign Missionary Society.—The society which has this as its legal title comprehends all persons who are members of the Protestant Episcopal Church. The Board of Missions consists of all the bishops of the American Church, the members for the time being of the House of Deputies of the General Convention, the delegates from the Missionary Jurisdictions, and the Board of Managers. The Missionary Council comprises all the bishops, an equal number of presbyters, and an equal number of laymen. It meets annually (except in the years when the Board of Missions meets), and is charged with taking all necessary action in regard to the missionary work of the Church which shall not conflict with the general policy of the board. The Council met in Detroit, Mich., Oct. 20, and continued in session for three days. It was well attended by bishops, clergy, and laity, and disposed of matters in hand with promptitude and hearty zeal. The annual report of the Board of Managers, with accompanying documents, was received, and note was made of the fact that the board, its general secretary, the various commissions, and the Woman's Auxiliary had done their work well, and deserved the confidence and support of the Church. The Board of Missions divides its work between a domestic committee and a foreign committee, which have headquarters in New York city.

Domestic Missions.—From Sept. 1, 1890, to Sept. 1, 1891, there were: Missionaries (17 missionary jurisdictions and 34 dioceses): bishops, 13; other clergy (white, colored, Indian), 520; teachers, other helpers, etc., 100; total, 620. The financial condition was as follows: Cash in hand (September, 1890), \$35,372.59; offerings, etc., \$150,109; legacies for domestic missions, \$23,478.98; legacies for investment, \$1,950; specials, \$37,412.85; moneys withdrawn for temporary purposes, \$76,204.76; total, \$324,617.20. Expenditures (17 missionary jurisdictions and 34 dioceses): for whites, \$117,451.09; Indians, \$42,082.74; colored, \$47,396.42; specials, \$20,252.26; overdraft, \$23,906.85; salaries, rent, printing, etc., \$18,662.26; legacies for investment, \$1,950; balance in hand, \$33,215.03; total, \$324,617.20.

Foreign Missions.—From Sept. 1, 1890, to Sept. 1, 1891, the number of missionary bishops was 4; the number of other clergy (white and native), 69; teachers, physicians, helpers, etc., 283. The financial condition was as follows:

Cash in hand (September, 1890), \$13,743.71; offerings, general fund, etc., \$178,714.81; specials, \$16,008.42; moneys withdrawn for temporary investment, \$32,689.48; total, \$241,151.42. Expenditures on account of missions, etc., in West Africa, China, and Japan (including Hayti and Mexico), \$178,878.60; specials for China, Japan, Hayti, etc., \$17,856.32; salaries, rent, printing, and incidentals, \$19,362.63; balance in hand, \$12,212.01; total, \$241,151.42. The mission property at foreign stations is estimated to be worth about the same as previously reported, viz., in Africa (Monrovia, Cape Palmas, etc.), \$40,000; in China (Shanghai, Wuchang, Hankow, Peking), \$157,100; Japan (Tokio, Osaka, Nara), \$64,000; in all (about) \$261,100.

Woman's Auxiliary to the Board of Missions renders important and efficient aid in all the departments by means of parochial, city, county, and diocesan associations of ladies, formed for the purpose of raising money, preparing and forwarding boxes to missionaries and mission stations, and in various other ways giving help to the missionary work of the Church. Money raised by the Auxiliary for domestic, foreign, and other mission work, \$153,700.55; boxes for the same (3,972 in number), value, \$195,954.14; total, \$349,654.69.

American Church Missionary Society (also auxiliary to the Board of Missions) has employed during the year, in 22 dioceses and missionary jurisdictions, 46 missionaries. The financial condition was as follows: Balance in hand (September, 1890), \$26,374.80; for general work, domestic missions, \$13,906.78; for general work, foreign missions (Cuba and Brazil), \$11,258.98; specials, \$4,458.36; balance in hand (September, 1891), \$10,007.40; total, \$65,416.32. The Society holds in securities, trust funds, bonds and mortgages, and property, to the amount of \$150,000. It also sends boxes of clothing and the like to the missionaries in its employ.

Church Work in Mexico.—This is placed under the direct supervision and control of the presiding Bishop of the American Church, the constitution of the Mexican Church being temporarily in abeyance. The work is carried on by a superintendent, residing in the city of Mexico, who is to "counsel and guide presbyters and laymen there who have asked that the fostering care of the Church in the United States be extended to them as a mission." An advisory committee for the work in Mexico has in charge all offerings made through the Board of Missions. Clergy, 5; lay helpers, 13; mission stations, 27. There is also a "league in aid of the Mexican branch of the Church," consisting of ladies residing in New York city. This association contributes money and sends boxes, etc., independently of the arrangement that is set forth above.

Church in Hayti.—This Church, though properly independent, is not quite strong enough to be self-supporting, and consequently seeks aid from the Protestant Episcopal Church in the United States. A commission of bishops has it in charge, and it receives help from the Domestic and Foreign Missionary Society. Aid was extended this year to the amount of \$7,819.44. Statistics: Bishop, 1; other clergy, 14; teachers, catechists, etc., 37. Estimated value of Church

property in Port-au-Prince, Jérémie, Aux Cayes, etc., nearly \$20,000.

Protestant Episcopal Churches in Europe, on the Continent.—These, organized under the canon, are in charge of a bishop of the American Church, who makes an annual visitation. Churches in France, 2; in Germany, 1; in Italy, 2; in Switzerland, 3; clergy, 10; contributions, \$3,206; estimated value of Church property in Paris, Rome, Dresden, Geneva, etc., \$132,650.

American Church Building-Fund Commission.—It was established in 1880, and continues its very useful and important work. The aim of the trustees is kept steadily in view, viz., to bring the fund up to at least \$1,000,000, so as to be able to give effective aid in all parts of the United States toward building chapels and new churches. The progress is rather slow, having reached only to the amount of \$207,435.22; but the trustees are sure that, as the value of the fund to the cause of the Church becomes more widely and better known, it must and will receive large additions. During the year thirty-seven new loans were made, the whole number being at date 174, to the amount of \$111,262.72.

Society for Promoting Christianity among the Jews (auxiliary to the Board of Missions) reports its usual quiet and steady progress during this its thirteenth year of work. The society has missionaries laboring in nine or ten of the large cities. Besides the paid missionaries, the parochial clergy co-operate with the society in almost every diocese. There are four missionary day schools, four industrial schools, and three night schools. Of publications, over 46,000 copies were issued during the year, and Bibles, Testaments, Scripture portions, and Prayer Books were circulated in English, Hebrew, German, and other languages. Much good has been accomplished in removing Hebrew narrowness and prejudice to a large extent, and though conversions are not rapid, yet there is excellent ground for hope in the future. Contributions: Sunday-school offerings, specials, etc., \$10,781.44; balance from old account, \$5,244.80; total, \$16,026.24. Expenditures for schools, salaries, publications, etc., \$13,181.33; real estate account, \$1,175.80; balance to new account, \$1,669.11; total, \$16,026.24.

General Condition of Church Affairs.—During the year three of the bishops have died, viz.: Bishop W. J. Boone, of Shanghai, China; Bishop C. F. Knight, of Milwaukee; and Bishop B. H. Paddock, of Massachusetts. Four presbyters have been consecrated bishops, viz.: H. M. Jackson, assistant, of Alabama; D. Sessums, assistant, of Louisiana; Phillips Brooks, of Massachusetts; and I. L. Nicholson, of Milwaukee. Six are on the list of retired bishops, viz.: G. T. Bedell, T. A. Jagger, C. C. Penick, S. I. J. Schereschewsky, H. Southgate, and C. M. Williams. In addition to those above named, seventy-seven of the clergy have died during 1891, of ages varying from thirty to ninety years; average age, fifty to fifty-five years. In addition to the regular ordained clergy, sisterhoods, deaconesses, and women trained for special work, which they alone can properly perform, are doing good and laudable service, and they are blessed in the fruits of their labors.

Q

QUEBEC, PROVINCE OF. By the "British North America Act" Quebec is made a pivot province, and a medium for regulating the parliamentary representation of the other provinces. The number of members for Quebec in the House of Commons was fixed at 65. "There shall be assigned to each of the other provinces such a number of members as will bear the same proportion to the number of its population (ascertained at such census) as the number 65 bears to the number of the population of Quebec (so ascertained)."

This provision necessitates a redistribution of parliamentary seats in the Commons House immediately after each decennial census, the representation of the province of Quebec remaining still the same. By the census taken in the spring of 1891 the population of this province was 1,488,586, an increase over that of 1881 of 129,559. In this aggregate is included the city of Montreal, the largest in the Dominion, with a population of 216,650, increased within the decade by 61,413, or 39.5 per cent., and the city of Quebec, provincial capital, the third city in the Dominion, with a population of 63,090. This city is, next to Halifax, the strongest fortified place in America.

Local Revolution.—What follows can scarcely, with strict propriety, be included under the head of Finance. Early in 1891 a number of charges were boldly made against the Mercier provincial administration. Premier Mercier and some of his ministerial colleagues were alleged to have taken bribes from certain railway contractors and others, for sums amounting to hundreds of thousands of dollars—the exact amount may probably come under "the unknowable"—conditioned upon the fraudulent assignment to such contractors, at inflated prices, of contracts for the construction of the Bay Chaleur Railway and other provincial works. A man named Pacaud was represented to have been the go-between in arranging these thrifty transactions, "for a consideration"; while Mercier himself, as was alleged, had received a large share of the fund to pay the expenses of a visit to Europe. These allegations were so boldly and circumstantially made that it was deemed incumbent to provide for an investigation. A commission was appointed, it is believed through

the insistence of Lieut.-Gov. Angers, with that end. The commission proceeded to investigate, and at length issued a partial and incomplete report, which, so far as it went, was highly damnable to the provincial ministry. Upon this report, the lieutenant-governor considered it incumbent upon him to call upon his ministers to resign their portfolios, which not having been promptly done, he took upon himself the responsibility of dismissing them from office, and called upon Hon. C. E. De Boucherville to form a new ministry. From this it followed that, in the last days of the old year, the following new ministry was announced: De Boucherville, President of the Council and Premier; Flynn, Minister of Crown Lands; Pelletier, Provincial Secretary; Beaubien, Minister of Agriculture; Casgrain, Attorney-General; Hall, Provincial Treasurer; Nantel, Minister of Public Works; Taillon, Masson, and McIntosh, without portfolios.

This bold action of the lieutenant-governor, seemingly on his own sole responsibility, caused great excitement and the widest diversity of opinion. The ex-ministers and their copartisans were soon again startled from the same quarter, for as soon as the new Cabinet were sworn into office Gov. Angers issued a proclamation dissolving the Provincial Assembly, the elections for the new House to take place on the 8th of March ensuing. Meanwhile the contest raged with virulence. Mercier and his following fiercely charged the lieutenant-governor with gross violation of the Constitution, which nothing could justify. The new ministers and their supporters, while averring the contrary, further maintained that the gubernatorial prerogative justified his acts, and that the cause of morality made those acts imperative upon him. They declared that they were possessed of evidence of great frauds and peculations on the part of the Mercierites, of which the general public yet knew nothing, and a new royal commission of investigation was resolved upon by Lieut.-Gov. Angers.

In the general election, held on March 8, the result was a triumph of the policy of Lieut.-Gov. Angers and his new ministry. The returns show the election of 56 Government supporters, or Conservatives, and 17 supporters of Mercier, the ex-Premier.

R

RAIN, ARTIFICIAL. Rain-making, or attempted rain-making, is of prehistoric origin, and almost as universal as the human race. The familiar story of Elijah and the prophets of Baal may be cited to prove its antiquity, while Jupiter Pluvius and the other cloud-compelling deities of Greece and Rome are almost equally familiar. Every modern traveler has tales to tell of barbaric devices to propitiate the powers that are supposed to prevail in the upper air. The summer of 1891 was unique in this respect. The

Hindus were permitted by their British rulers to resume rain-making on their traditional lines, involving human torture and all but human sacrifice; the savage African lighted his bonfires and sang his rain-song as usual; the Indian medicine-man beat his drums and shook his rattles as of old; and the Government of a great civilized nation, for the first time in history, entered the arena with costly apparatus and undertook to accomplish on scientific principles what barbarians have long sought to do with such appliances

as they could command. Without entering into the discussion of questions that at best must be regarded as undetermined, a brief account of the undertaking is here given.

On motion of the Hon. Charles B. Farwell, Senator for Illinois, a resolution was introduced in the United States Senate appending a clause to the general appropriation bill for 1891 which provided that under the direction of the forestry division of the Department of Agriculture \$2,000 should be expended in experiments having for their object the artificial production of rainfall by means of explosives. Subsequently this sum was increased to \$10,000. There was some discussion in both Houses of Congress concerning the appropriation, but it appealed so strongly to that native sense of humor, which is so powerful an element in the conduct of American affairs, that it passed by a handsome majority, and R. G. Dyrenforth, of Washington, was appointed to superintend the expenditures. A corps of rain-makers was organized, including two balloonists (Carl Meyers and George E. Casler), E. Powers (author of "War and the Weather"), John T. Ellis, and other assistants. Mr. Dyrenforth elaborated a system of apparatus for firing heavy charges of high explosives, as well as ordinary gunpowder, at high elevations. The party left Washington in July, and on Aug. 5 reached the ranch of Nelson Morris, a few miles from Midland, Texas, a retired place where the intended explosions would not be attended by disaster, except, perchance, to the operators themselves. It was alleged that this was a particularly dry region, where little or no rain had fallen for several years. The party reached the ranch on Aug. 5, and were occupied for several days in preparing their complicated outfit, consisting of several dozen balloons, kites, retorts, and various chemicals. The apparatus likewise included an electrical outfit, which it was intended to use in firing the charges sent aloft or placed upon the ground. The official reports of the experiments, which extended over a period of nearly three weeks, represent them as resulting in complete success; but unofficial reports, emanating for the most part from spectators attracted by the unusual spectacle, and from newspaper reporters, do not altogether agree. The first explosions were on Aug. 9, and were of minor importance as regards strength. It is certain that a rain occurred on the next day; but as a natural and unprovoked rain had occurred on the day before, the experimenters did not claim any credit for the second downfall. Again, on the 18th, there were explosions, also followed by rain; these, however, were considered as merely preliminary, and it was not until the 20th that all the arrangements were completed for the final, and, as it was claimed, decisive test. The results appear to have been unsatisfactory for several days, even to Mr. Dyrenforth, but on Aug. 26 the conditions became favorable. According to a correspondent of the New York "World," "the night was beautifully clear, and not a cloud could be seen. The heavens were dotted with stars, and from all indications it was safe to predict that no rain would fall within forty-eight hours at the least. A strong gale was blowing toward the west. Five balloons were sent up and exploded and 200 pounds of rackarock powder and 150 pounds of

dynamite set off on the ground. There was, of course, no immediate result. The barometer was rising, and the needle was pointed at fair. By three o'clock in the morning a bank of clouds appeared on the western horizon at the point toward which the smoke and noise had blown. The sky rapidly became overcast, and by four o'clock there was rain, accompanied by thunder and lightning. When the sun rose, it was seen that the storm had come directly out of the west, and on the horizon the clouds rose in a funnel-shape, like the smoke from a volcano. There was a beautiful rainbow visible at sunrise. It ceased raining at about eight o'clock." The substance of the official report is to the effect that rain followed wherever there chanced to be moisture and the explosion was delivered at the proper altitude.

After the experiments were concluded there was a vast deal of discussion as to the scientific aspects of the case. Eminent scientific authorities were averse to acknowledging that any really beneficial results had been obtained or that any really valuable scientific conclusions had been reached. A great deal of fun was made in the newspapers about the whole proceeding, but the fact remains that the whole civilized world was intensely interested in the experiments, and those who had no individual hobbies to prove were disposed to view them with every possible allowance for imperfection of equipment and the lack of experience inseparable from a first attempt.

There are widely different theories as regards the possibility of inducing the conditions necessary to the precipitation of moisture which we popularly call rain. It is agreed in general that rain, under natural conditions, results from the mingling of air strata of different temperatures. The great level plains of the world, whether of earth or water, appear to be largely the birth-places of storms. Over such plains the air can most easily adjust itself in extended layers of different temperatures. The simplest condition preliminary to a rainfall is perhaps one in which a stratum of warm air underlies a similar stratum of cold air; between these two there may be a space of intermediate temperature separating the two hostile elements. It is admitted by students of meteorology that disturbances at or near the dividing line between these different strata may open a way for the cold air, which is heavier, to rush downward, and for the lighter warm air to rush upward. The mingling of the two under certain conditions, as yet not well understood, undoubtedly causes rain. So far science is agreed, but when we come to the details, opinions diverge. Thus, it is generally believed that at a considerable distance above the earth, or at least above the territory of the United States, there is a current of air almost perpetually moving eastward; that, therefore, if a local explosion could cause precipitation at a given place, the moisture would be carried perhaps one or two hundred miles before it could reach the earth. This, however, is mere speculation. The theory that rain can be precipitated by explosions certainly needs proof, but it needs proof no more than do the theories of those who scoff at the possibility of such a result.

The attention of observers from time immemorial has been drawn to the frequent occurrence of rains accompanying the heavy explo-

sions of volcanic eruptions or the comparatively trifling disturbances that occur on modern battle-fields. It appears to be established by authentic history that great battles are frequently accompanied or followed by rains, but a certain amount of untrustworthy statement comes in with these records. For instance, it is said that as many of the battles of antiquity, before the discovery of gunpowder, were followed by rains as is the case in more modern times. Mr. Dyrenforth himself is responsible for the suggestion that the meeting of armies provided, as were those of the Greeks and Romans, only with hand-weapons, might have caused sufficient atmospheric disturbances to produce rain. It requires certainly a great deal of confidence to place any faith in a theory of this kind. The mere clash of arms and the united shouts of thousands of enraged combatants could hardly be heard at the distance of a mile, even under very favorable conditions. The discharge of fire-arms disturbs the atmosphere to a far greater extent. It has fallen within the experience of almost every one to notice, for instance, the jarring of a window sash when a gun is discharged at a considerable distance. While it is easy, therefore, for the scientist to prove that a cubic foot of air can only be expanded by the highest explosive known to a comparatively moderate extent, he can not prove, for it is beyond his ken, what effect such expansion may have among the nice barometric and hygrometric adjustments possible in Nature's secret places. It is probably within the experience of most of us to have noticed the sudden fall of rain that often follows the shock of a thunder-clap, and we must accept the statements of travelers regarding the same results which are said to follow the tremendous discharge of volcanic eruptions. Violent and extensive rainfalls followed such eruptions as that of Krakatoa a few years ago in the Straits of Java. In South America, according to Humboldt and others, it is generally believed that volcanic eruptions, even in a very dry season, are apt to change the atmospheric conditions and produce rain. It is claimed, moreover, that the burning of woods, of the long, dry grassed prairies, and of cane-brakes in southern savannas, are so generally followed by heavy rain that there is considerable ground for believing that either the heat or the vast columns of smoke, or both together, have some share in producing the necessary conditions. Prof. Powers's book, referred to above, is the most elaborate attempt that has been made to collect in accessible shape all known statistics regarding the supposed effect of heavy artillery. Many of his conclusions have been questioned with more or less justice, but most of his facts are well authenticated. A few of these may be mentioned: During the siege of Valenciennes by the allied armies in 1793 the weather had been remarkably favorable for military operations, save that it had been peculiarly hot and dry. Two hundred pieces of heavy artillery were used in the attack, and half as many more in the defense of the city; all these were often in action at the same time, and the weather became rainy very shortly after the cannonading began. At the battle of Dresden, in 1813, after an excessively hot August, the weather abruptly changed almost as soon as fir-

ing was opened. Prior to the battle of Waterloo, on June 17, 1815, the weather had been excessively hot, and a dense cloud hung over the waiting armies. The allied guns opened fire with a view to breaking the French advance; apparently the discharge destroyed the electrical equilibrium, for a thunder-clap burst forth and immediately a tremendous shower of rain fell, which, as one historian says, has probably never been exceeded even in the tropics for violence. This heavy rain, as is agreed by all the historians of that great battle, was largely influential on the operations of the main conflict which followed on June 18. Among Americans, too, there is a widespread belief that the discharge of fireworks on the Fourth of July is very certain to induce rain and interfere with the enjoyment of the national holiday.

It will occur to any one who considers the conditions indicated, that something more is required to produce rain than a mere explosion; apparently explosions have been delivered in the most favorable location and at the most auspicious moment, and yet no rain has followed. It is held with good show of reason that dust of some kind, either smoke or dust stirred up by a whirlwind, is almost a necessary concomitant in precipitating moisture. Whether this be so or not, experiments are recorded in which moisture is condensed in a glass receiver. It is found to be quite possible to form mist in perfectly dust-free air, but this was effected by forcing air into the jar and suddenly releasing the pressure, thereby causing an explosion or its equivalent by a sudden rush of atmospheric globules. It may be unsafe to say, with our present knowledge, that particles of different temperature may always be made to combine by concussion, yet it is very certain that sometimes they can be induced so to combine, and possibly by artificial means.

While, therefore, the experiments of last summer may not have been all that Science could wish, may not even have been conducted in all respects as she had a right to demand, it is hardly fair to pronounce them an utter failure.

That the impression made upon the public was on the whole favorable, appears from the formation of sundry rain-making companies, and the announcements of individuals to the effect that rain may be had for the asking, on payment of a suitable consideration. But for the readiness of people to be swindled, it were needless to caution the public against these organizations. Many years may elapse before the rain conditions are well enough understood to gratify trustworthy conclusions, but it is not outside the pale of probability that some time our country may be very proud that she was the first to institute experiments in this direction.

REFORMED CHURCHES. I. Reformed Church in America.—The Committee on the State of the Church reported to the General Synod, in June, 1891, that the number of churches was 570; of ministers, 562; of licentiates, 8; of communicant members, 94,323; of Sunday schools, 815, with 108,691 teachers and pupils; of admissions during the year on confession of faith, 6,114; amount of contributions to home missions, \$61,945; to foreign missions, \$116,265; to other benevolent objects, \$131,442; for congregational purposes, \$1,013,325.

The receipts of the Board of Home Missions had been \$61,945, of which \$12,112 had been obtained through the Woman's Executive Committee. Ninety-seven missionary porters had been employed in 137 churches and mission fields; 20 new churches had been organized, and 13 missions started; and 662 persons had been added on profession.

The Board of Education had 99 students under its care.

The contributions to the Disabled Ministers' Fund had increased nearly \$600 over those of the preceding year.

The total receipts for the year of the Committee on Foreign Missions had been \$116,265. The Woman's Board had contributed \$18,000, or \$200,000 since its organization. The Synod recommended the holding of general missionary conferences in behalf of the home and foreign boards.

The three classes in the theological seminary of the Arcot Mission, India, had been attended by 14 students.

The General Synod met at Asbury Park, N. J., June 4. The Rev. E. T. Corwin, D. D., of New Brunswick, N. J., was chosen moderator. The most important business transacted was the presentation and adoption of the report of the Committee on Federal Union with the Reformed Church in the United States. The report narrated the proceedings of the joint commission at the meeting held in the Catskill Mountain House in September, 1890 (see "Annual Cyclopædia" for 1890), and of a special meeting held in New Brunswick, N. J., June 3, 1891. The result of its work was given in the shape of a draft of constitution for a federal union, to be represented by a federal synod, and of special provisions for giving the constitution practical effect. A summary of the articles of the constitution is given below. The constitution and supplementary paper were adopted by a unanimous vote to be sent to the Classes for consideration and action by them. The Synod granted an application from the trustees of Rutgers College for a modification of the stipulation requiring that three fourths of the members of the board shall be communicants of the Reformed Church, so that only two thirds of them need be so qualified. Sympathy was expressed with the proposition of the Southern Presbyterian Church to petition the civilized nations to settle all disputes by arbitration. Agreeably to the report of the committee on a plan of securing recruits for the ministry, pastors were requested to present, at least once a year, the claims of the ministry on young men, and to direct the attention of parents and pious sons to this subject. The Committee on the State of the Church reported that the past year had been one of the most prosperous in the history of the denomination. The accessions had been more numerous than in any year since 1877. There had been a net increase of 12 churches, 787 communicants, 10 Sunday schools with 1,178 pupils, and an advance in benevolent contributions of \$3,399. The object and methods of the American Sabbath Union were approved, and it was commended to the confidence and support of the churches. A protest was declared against opening the World's Columbian Exhibition on Sun-

days. A Standing Committee on Sabbath Observance was constituted. The work of the New York Society for the Suppression of Vice was commended. The Committee on Systematic Beneficence was instructed to present some plan for adoption by the churches. In response to communications from the Presbyterian Church in the United States of America, committees were appointed to consider and confer upon the subjects of a consensus creed and a federation of Christian Churches.

II. Reformed Church in the United States.—The General Synod of the Reformed Church in the United States met in special session in Philadelphia, June 4. The Rev. J. S. Keifer, D. D., presided. The purposes of the meeting were stated to be to join with the Presbyterian Church in the United States of America in formulating a consensus creed, and to act on the question of union with the Reformed Church in America. The report on a federal union with the Reformed Church in America was taken up first. It said:

It is believed that if a union be formed, which gives but little authority or power to the judicatory at the beginning, the union will grow closer by trial, and the federal judicatory will gradually more and more win the confidence and affection of the Churches. If this federal judicatory should prove to be a decided advantage to the growth and prosperity of the Churches it represents, greater power may be given to it from time to time. Even if it should never possess more than advisory powers or functions, yet if it should serve to promote closer co-operation between the two Churches in the union, or, in addition, open the way for an alliance of all the Reformed Churches of this country, the experiment will not be in vain. Considering the repeated efforts to bring about this union, though former ones failed, it would seem that the desire for union is so deep-rooted that it will not be satisfied until a fair trial be made.

The articles agreed upon by the Joint Committee as the constitution of the federation and the provisions for carrying them into effect were unanimously approved; the president of the Synod was authorized, if the articles should be adopted by the Classes in 1892, in conjunction with the brethren of the Dutch Church, to designate the place of meeting of the Federal Synod, and delegates were chosen to represent the Church in that body. Concerning the other object of the special session (numbered 1 in the call), the Synod appointed a committee "to confer with the committee of the Presbyterian Church with regard to the forming of a consensus creed, and to co-operate with said committee, provided the consensus be based upon the historical confessions of the Reformed Churches holding the Presbyterian system, without giving preference to any one in particular." Exception had been taken in the debate to the omission in the overture of the Presbyterian General Assembly of the Heidelberg Catechism from the list of standards on which the consensus creed shall be based.

Constitution of the Federal Union of the Reformed Churches.—The following are the essential articles of this act:

I. Each denomination entering into this union shall retain its distinct individuality, as well as every power, jurisdiction, and right which is not by this constitution expressly delegated to the body hereby constituted.

II. Full faith and credit shall be given by each of the denominations to the acts, proceedings, and records of the duly constituted authorities of the other denomination.

III. For the management of certain common interests of these federated Churches, an ecclesiastical assembly is hereby constituted, which shall be known by the name and style of The Federal Synod of the Reformed Churches.

IV. The Federal Synod shall consist of sixteen ministers and sixteen elders from each of the constituent denominations, who shall be chosen with *secundi* under the direction of their respective General Synods in such manner as these Synods shall respectively determine.

[This article goes on to direct the method of allotting the terms of the members of the Federal Synod, so that one fourth of those representing either Church shall go out every year—the full term being four years.]

V. To the Federal Synod shall be committed powers relating to missions, domestic and foreign, to new educational enterprises common to both denominations, to the general superintendence of Sunday-school interests and literature, and to other ecclesiastical matters, such as shall be determined by the concurrent action of the constituent General Synods.

VI. The Federal Synod may advise and recommend in all matters pertaining to the general welfare of the kingdom of Christ, but shall not exercise authority except such as is expressly given it under this constitution. Whenever anything recommended by the Federal Synod shall have received the assent of each of the General Synods, it shall have the force of law in both denominations.

VII. The Federal Synod shall have power of opening and maintaining a friendly correspondence with the highest assemblies of other religious denominations, for the purpose of promoting union and concert of action in general or common interests.

VIII. The Federal Synod shall not interfere with the creed, cultus, or government of either denomination. Also, all matters of discipline shall be left to the exclusive and final judgment of the ecclesiastical authorities of the denomination in which the same may arise.

IX. All conflicting interests between the two denominations shall be arbitrated by such executive agencies as may be created by the Federal Synod, under this constitution, with the right of appeal to the Federal Synod for final adjudication.

Other articles relate to the officers of the Federal Synod, its meetings, provision for its contingent expenses, and amendments to the constitution, for which the concurrent action of the three bodies is required. Supplementary articles, styled recommendations of the joint commission, provide for the future management of home and foreign missions, Sunday school work and literature, and educational work under co-operative direction.

REFORMED EPISCOPAL CHURCH.

The committee on the state of the Synod reported to the General Council of this Church in June that the number of parishes and missions was 111, and of communicants 9,967, the latter item showing a gain of 764 over the report of two years previously; amount of contributions for the last year only, \$192,197, being a gain of \$16,686 over the last report; value of church property, \$1,490,912; total value of property, \$1,943,912.

The thirteenth General Council of the Reformed Episcopal Church met in Cleveland,

Ohio, June 1. The treasurer's report showed that his total receipts had been \$15,944, and his expenditures \$13,397. For the fund for special Church extension \$20,141 had been received and \$20,086 expended. The receipts for the Theological Seminary had been \$16,601, and the expenditures \$18,508. Balances were reported in favor of the Sustentation fund of \$10,578; of the Widows' and Orphans' fund, of \$9,432; of the special Missionary fund, of \$4,600; of the Eleanor H. Stroud fund, of \$7,000; and of the estate of George Curtis, of \$28,065. The receipts for missions had been \$11,895. A mission had been begun in Alaska.

Reports of the condition of their several jurisdictions were made by Bishop Cheney, of Chicago; Bishop Nicholson, of New York and Philadelphia; Bishop Stevens, of the missionary jurisdiction of the South; Bishop Latané, of Baltimore; Bishop Fallows; and Bishop Cridge, of British Columbia. All except the last recorded healthy growth. The Council recorded its "distinct and emphatic opposition" to the appropriation by the civil authorities—national, State, and municipal—of money or properties to ecclesiastical organizations, and its fixed purpose not to ask or accept in future any such appropriation. A canon was agreed to declaring that "no presbyter coming from any evangelical church into this Church who has been previously set apart and formally ordained to the ministry of the Gospel shall be reordained by the authorities of this Church." The canon has, however, to be approved by another General Council before it can become a law of the Church. The election of the Rev. T. W. Campbell as Bishop of the First Synod of the Dominion of Canada was confirmed, and he was consecrated bishop in the presence of the Council. The Canadian Synod was authorized, at its discretion, to use informally the style "Protestant Church of England, which is the Reformed Episcopal Church of Canada." A delegate was appointed to represent the Church in the conference in favor of arbitration in place of war as a means of settling international disputes, which has been invited by the Southern Presbyterian General Assembly.

RHODE ISLAND, a New England State, one of the original thirteen, ratified the Constitution May 29, 1790; area, 1,250 square miles. The population, according to each decennial census, was 68,825 in 1790; 69,122 in 1800; 76,931 in 1810; 83,015 in 1820; 97,199 in 1830; 108,830 in 1840; 147,545 in 1850; 174,620 in 1860; 217,353 in 1870; 276,531 in 1880; and 345,506 in 1890. Capitals, Newport and Providence.

Government.—The following were the State officers during the year: Governor, John W. Davis, Democrat, succeeded by Herbert W. Ladd, Republican; Lieutenant-Governor, William T. C. Wardwell, succeeded by Henry A. Stearns; Secretary of State, Edwin D. McGuinness, succeeded by George H. Utter; General Treasurer, John G. Perry, succeeded by Samuel Clark; State Auditor and Insurance Commissioner, Elisha W. Bucklin, succeeded by Albert C. Landers; Attorney-General, Ziba O. Slocum, succeeded by Robert Burbank; Railroad Commissioner, E. L. Freeman; Commissioner of Public Schools, Thomas B. Stockwell; Chief Justice of the Su-

preme Court, Thomas Durfee, who resigned in March and was succeeded by Justice Charles Matteson, by election of the General Assembly; Associate Justices, Pardon E. Tillinghast, John H. Stiness, George A. Wilbur, Charles Matteson, promoted as above stated, Horatio Rogers, and William W. Douglas. The two last named were elected by the General Assembly on May 27, one to succeed Justice Matteson and the other as the additional justice authorized by an act of the General Assembly passed on the same day.

Finances.—The following is a summary of State finances for 1891: Funded debt, Jan. 1, 1892, \$1,283,000; sinking fund, Jan. 1, 1892, at par, \$1,049,763.68; State debt, less sinking fund, \$233,236.32. State debt, less sinking fund, Jan. 1, 1891, \$331,296.05; decrease past year, \$98,059.73; balance in treasury, Jan. 1, 1891, \$85,528.57; receipts, 1891, \$1,202,263.13; total, \$1,287,791.70. Payments, 1891, \$1,211,852.23. Balance in treasury, Jan. 1, 1892, \$75,939.47. The total receipts for the year were greater by \$126,299.48 than the receipts for 1890, the increase being mainly due to the refunding to the State of \$87,493.34 direct tax paid to the United States during the civil war. A large increase of expenditure was caused by the erection of new buildings at the State Agricultural School, the Soldiers' Home, and the State institutions at Cranston. The State tax is still assessed on the valuation of \$328,580,559, made when the population was about 235,000. Since that time the population has increased to upward of 350,000, while the present valuation, according to the Board of State Valuation, is \$396,794,552. Were the State tax assessed on this latter valuation the increase in receipts from that source would be \$126,000. The State is practically out of debt, the funded debt being provided for. To secure increased revenues the need of a new system of taxation is imperative.

Legislative Session.—The adjourned session of the General Assembly of 1890 began on Jan. 20 of this year and ended on May 1. An act was passed at this session in the interest of employes, providing that "every corporation, other than religious, literary, or charitable corporations, and every incorporated city, but not including towns, shall pay weekly the employes engaged in its business the wages earned by them to within nine days of the date of such payment, unless prevented by inevitable casualty." A fine is imposed for violation of these provisions.

The Australian ballot system, which was first introduced in State elections, and later, by an act passed in June, 1890, extended to municipal elections, was at this session further extended by a general law so as to apply to elections for town officers in any town that by a majority vote shall decide to accept the provisions of the act. Towns that accept the Australian system are required to bear the expense of providing the official ballots. Two special acts were also passed requiring the towns of Cumberland and East Providence to use the Australian system. An institution for the care and education of deaf children, known as the Rhode Island Institute for the Deaf, was established, and \$50,000 appropriated for land and buildings. Other acts of the session were as follow:

Regulating the sale of coal by measure in baskets, fixing the size of baskets for bushel and half-bushel measures, and requiring all such to be scaled.

Authorizing the city of Providence to borrow the following sums: \$700,000 to be expended for highway work; \$2,000,000 to be expended on sewers, in addition to sums previously authorized for the same object; \$500,000 for the purchase of land for parks and the construction thereof; \$300,000 for the purchase of lots for school-houses and the building of school-houses; and \$400,000 for improving the water supply, in addition to sums previously authorized for the same purpose.

Granting to the city of Providence the right to condemn the Hopkins Burial Ground for park purposes.

Authorizing the city of Woonsocket to borrow \$400,000 for establishing and constructing a system of sewerage, and \$200,000 for enlarging and improving its water-works.

On April 17, in grand committee, Charles Matteson was elected Chief Justice of the Supreme Court, vice Thomas Durfee resigned.

The General Assembly chosen at the April election assembled at Newport on May 26, and adjourned on May 29, to meet at Providence on July 21. On the first day of the session the returns for State officers were opened, and no election by the people was declared. The Assembly then elected Herbert W. Ladd to be Governor; Henry A. Stearns, Lieutenant-Governor; George H. Utter, Secretary of State; Samuel Clark, General Treasurer; and Robert Burbank, Attorney-General. On May 27 Albert C. Landers was elected State Auditor. An act was passed on the same day increasing the number of Associate Justices of the Supreme Court from four to five, and Horatio Rogers and William W. Douglas were elected to that office, one of them being a successor to Justice Matteson, who had been promoted to Chief Justice. The control of the State Home and School was taken from the State Board of Education and vested in a board of seven persons, to be appointed by the Governor with the approval of the Senate, each holding office for three years. For the purpose of securing a State exhibit at the World's Columbian Exposition, \$10,000 was appropriated, to be expended under the direction of a board of World's Fair managers. At the adjourned session this was increased to \$25,000. The session adjourned on Aug. 5, to meet on the third Tuesday of January, 1892, at Providence.

Education.—For the school year ending April 30, 1890, the Commissioner of Public Schools reports the following statistics: Pupils enrolled, 52,774; average attendance, 33,905; average school year, nine months eight days; male teachers, 174; female teachers, 1,204; average monthly wages—male teachers, \$89.48; female teachers, \$45.40; paid for teachers' wages, \$549,367.38; total receipts for school purposes during the year, \$1,091,993.86; total expenditures for school purposes, \$917,990.26; number of school-houses, 482; value of school property, \$2,739,672. There were 45 evening schools conducted during the year for an average of 12½ weeks, in which 7,623 pupils were enrolled, the average attendance being 2,858. There were 125 male and 207 female teachers employed in these schools. The annual census of children of school age (between five and fifteen years of age) taken in January, 1890, showed 43,163 attending

public schools: 8,275 attending Catholic schools; 1,478 attending select schools; and 12,044 not attending school. The attendance at the State Normal School for the year ending June 26 was 203, an increase of 3 over the previous year. On Dec. 31 there were 55 pupils at the Agricultural School at Kingston.

Charities.—At the State Insane Asylum there were 515 inmates on Jan. 1, of whom 238 were men and 277 women. During the year, 178 patients were admitted and 152 discharged, leaving 541 remaining on Dec. 31, of whom 252 were men and 289 women. The State almshouse contained 236 inmates on Jan. 1; 310 were admitted during the year, and 311 were discharged.

At the Sockanosset School for Boys the whole number in school Dec. 31, 1890, was 185; received during the year, 151; number discharged, 161; total number in school Dec. 31, 1891, 175; at the Oaklawn School for Girls there were 30 girls on Jan. 1. During the year there were received 36 pupils, and 30 were discharged. The year has seen the completion and occupation of the new almshouse, construction of a chapel and hospital, and introduction of industrial training at Sockanosset School for Boys.

Prisons.—At the State Prison there were 110 men and 2 women on Dec. 31, 1891, of whom 100 were white and 12 colored. The average number for the year was 112. The State Work-House and House of Correction contained 215 men and 51 women on Jan. 1, 1891. There were committed during the year 441 men and 135 women; 452 men and 131 women were discharged, and there remained on Dec. 31 204 men and 55 women. At the Providence County Jail there were committed during the year 1,995 men and 259 women; there were discharged 1,997 men and 263 women; and there were remaining 240 men and 15 women on Dec. 31.

Soldiers' Home.—The dedication of the Soldiers' Home at Bristol was observed May 21, since which time the number of veteran soldiers at the institution has steadily increased. The whole number of inmates on Dec. 31 was 92.

Militia.—The military and naval force of Rhode Island numbers 1,492 officers and men, of whom 1,036 are in the brigade. Twenty-four thousand dollars has been nominally the annual appropriation, but the Assembly has been called upon at the close of each year to make up a deficiency of upward of \$5,000. An important addition to the available force has been made the past year in a company of naval militia organized in Bristol, numbering 57 officers and men.

Savings Banks.—In the savings banks and institutions for savings the deposits on Nov. 17, 1891, were \$66,276,157.44, a gain for the year of \$2,556,665.87. The number of depositors was 136,648, an increase of 4,996.

Political.—On March 10 a State Convention of the Republican party met at Providence and nominated the following ticket, to be voted for at the State election in April: For Governor, ex-Governor Herbert W. Ladd; for Lieutenant-Governor, Lyman B. Goff; for Secretary of State, George H. Utter; for Treasurer, Samuel Clark; for Attorney-General, Robert W. Burbank. A resolution in favor of the policy of reciprocity inaugurated by Hon. James G. Blaine was passed, but no distinct party platform was adopted.

Lyman B. Goff, the candidate for Lieutenant-Governor, was later mentioned on the ticket by Henry A. Stearns.

On the same day the Prohibition State Convention met at Providence and made the following nominations: For Governor, Rev. John H. Larry; for Lieutenant-Governor, Joshua C. Brown; for Secretary of State, David O. Cargill; for Treasurer, Louis E. Remington; for Attorney-General, Thomas H. Peabody. The platform contains, in addition to the usual anti-saloon resolutions, the following:

We declare that our present tariff is improperly called "protection to American labor," and while we believe that it is impossible to make this a great national issue, such modifications should be made as will cheapen necessities rather than luxuries, and stimulate private enterprise instead of fostering trusts and monopolies.

We call especially for the enforcement of laws in regard to the employment of child-labor in this State.

The Democratic State Convention met at Providence on March 12, and re-nominated Gov. Davis, Lieut.-Gov. Wardwell, Secretary of State McGuinness, Treasurer Perry, and Attorney-General Slocum. The following is a portion of the platform:

It [the Democratic party] demands free raw material for the manufacturing industries of this State, and lower taxes on the necessities of life for our people generally; and it denounces the policy by means of which the Eastern States are reduced to the position of the fiscal feudatories of Pennsylvania and Ohio.

The Democracy of Rhode Island does not advocate the impossible theory of free trade, but it believes in a freer trade with all countries, exchange and barter being the life of business.

We are in favor of honest money, sufficient in quantity to answer the needs of the people.

We are in favor of elections by a plurality instead of majority vote, a more uniform franchise than now exists, freedom of judges from legislative control, except in the ordinary case of impeachment, and additions to executive power and responsibility. For these and other needed reforms, a constitutional convention is necessary, and we favor it for these reasons.

There was also a ticket in the field representing the Nationalist party. At the April election there was no choice by the people, no candidate having a majority of all the votes cast. For Governor, Davis received 22,249 votes, Ladd 20,995, Larry 1,829, Burton, the Nationalist candidate, 384. The choice thereupon devolved upon the General Assembly, which in May elected the Republican candidates. Members of the General Assembly of 1891-'92 were voted for at the same election, but several by-elections were necessary before the full membership was determined. The result was in favor of the Republicans, who elected 27 members of the Senate and 52 of the House. The Democrats elected 9 Senators and 20 members of the House.

ROMAN CATHOLIC CHURCH. The most striking characteristic of 1891 was the special interest taken by the Church authorities, from the Pope down, in the social question. Leo XIII, by his great encyclical and his letters foreshadowing it, struck the keynote, and the Catholic congresses of France, Germany, Spain, Belgium, and England, tuned their deliberations and their pronunciamientos in harmony. The discussions of all these assemblies intimated the

determination of the Church to counteract the march of Socialism and anarchy by leading in the effort to uplift the masses who through degrading and exhaustive toil have neither the means, the opportunity, nor the inclination to assist themselves.

Besides this, the year was marked by an intensified zeal in missionary work. Cardinal Lavigerie's crusaders were materially augmented in Africa; the Jesuits were specially active in the remote northern countries; the members of the Lyons Propaganda Society penetrated every corner of Madagascar, Japan, Borneo, New Guinea, China, and India. The Franciscans were given charge of the holy places in the East, and a fresh effort was inaugurated to bring the schismatic churches of the Orient into communication with Rome.

The relations of the governments of Germany, Austria, France, England, and even Russia with the Vatican showed improvement on the whole. The Italian Government continued to regard Rome and the treasures of the Church as its private property, and Marquis Rudini, Premier Crispi's successor, served notice on the Pope that while he proposed to maintain the "law of guarantees," he would brook no interference of the Vatican with the absolute authority of King Humbert in matters either of Church or state. The municipal elections in Rome, which are the only ones in which Catholics are allowed to participate by the Pope, showed a respectable Catholic return in the city council.

The Vatican.—The first official document signed by His Holiness at the opening of the year was one blessing the project of Archbishop Salvatore to honor Columbus in his native Genoa. It emphasizes the Christian character of the discoverer. The letter is as follows:

To our Venerable Brother Salvatore, Archbishop of Genoa: Health and Apostolic benediction:

It is pleasing to us to learn from your letter of the 4th of January that you are laboring with diligent zeal to prepare for the coming year at Genoa solemn secular festivities in celebration of the memorable voyage of which Christopher Columbus succeeded, four centuries ago, in discovering previously unknown regions on the other side of the globe.

Assuredly it is above all fitting that the honor which many are eager to render to this immortal genius in other places, should be paid to him in the city in which he was born, and to which he is a distinguished ornament and honor. We therefore highly approve of your design of establishing a council of chosen citizens to see to the carrying out of this intention, and we have read with great satisfaction the pastoral letter which you have, with that view, addressed to the clergy and laity of the diocese over which you preside. But your prudence and piety are principally manifested in your earnest anxiety that the celebration and rejoicings should be of a character in keeping with Columbus's undertaking, his disposition, and the spirit by which he was animated. For it is attested by the most undoubted historical monuments that he entered his arduous undertaking in order that the light of the Gospel might be shown on those distant shores, and he became in some measure a minister of Christ, who said to his disciples, "Go throughout the world and preach the Gospel to every creature." Hence injury would be done to the memory and the name of this excellent man by any one who would only recognize the worldly aspect of his undertaking, and who would tender to Columbus merely the honors to be awarded to those who take no thought of the Catholic faith, and in their great

deeds seek to gain alone praise for ability and constancy.

The religious feeling and wisdom by which the people of your Liguria and the other Italians are distinguished being well known to us, we doubt not that it will be understood by many that you have provided in the best way for honoring the memory of such a remarkable man, and that they will spontaneously and heartily support and aid the council of worthy citizens established by you.

We sincerely trust that through this celebration, and through the effect of the example set by Columbus, the zeal of many will be stimulated, so that each shall do all that is in his power to extend the kingdom of Christ on earth.

Meanwhile, for the aforesaid design we implore the divine assistance, and to this end we affectionately impart the apostolic benediction to you, venerable brother, and to the clergy and people confided to your care.

Given at St. Peter's, Rome, on the 10th January, 1891, and the thirteenth year of our pontificate.

LEO XIII, Pope.

The Temporal Power.—On the 3d of March the Pope addressed a long letter to the hierarchy of Austria, in which he advised annual reunions among the bishops, annual congresses of laymen to discuss social, scientific, and moral principles, the encouragement of the Catholic press, active effort to solve the labor problem amicably, and the higher education of the clergy. He specially referred to the necessity for the temporal power in these words:

In the unfortunate times with which we are afflicted, we desire that all efforts and care should from the start tend to reunite, by approaches growing nearer every day, the lines of the Christian family with the hierarchical order; in such fashion that the faithful may be united to their bishops in all good will and submission, and, above all, that they guard with ardor and bravely profess one faith, one obedience, and one filial piety under the Bishop of the Universal Church.

Now, since to wish that the Roman Pontiff may be subject to no human power, and that he may be fully and perfectly free, is a sacred obligation which concerns the Catholics of all nations, and not one alone, the bishops should consult upon the matter and apply themselves to arouse and excite the solicitude of the faithful in this very just cause, with the view of hastening a happy result.

The Pope and Slavery.—Pope Leo on his eighty-first birthday, March 2, in answer to the congratulations of his cardinals, spoke at length upon the trials of his pontificate, which he likened to that of Gregory the Great. He drew special attention to the African slave trade, and said that if the Lord spared him to celebrate his episcopal jubilee in 1893, he would devote the offerings of the Christian world to him on that occasion to the abolition of slavery and Christianization of Africa.

St. Peter's shaken.—The Vatican was shaken by an explosion of 260 tons of gunpowder in a magazine on the outskirts of Rome, April 24. All the windows of the Pope's library were shattered, and many precious relics were destroyed. St. Paul's Church and monastery suffered specially. The tercentenary celebration of the death of St. Aloysius Gonzaga, June 21, was worldwide, and a special feature of it was a pilgrimage to Rome by the young Catholics of Italy.

The Labor Encyclical.—Pope Leo, under date of May 15, issued what will probably pass

down to history as the most remarkable encyclical of his pontificate. It recorded his sympathy with the legitimate aspirations of the toilers in the language of conciliation and love. The reciprocal duties of labor and capital, as well as the provinces of the Church and state in ameliorating the conditions of the impoverished, ill-paid, and neglected workers, were distinctly pointed out. It indicated the necessity for mutual forbearance and consideration on the part of employers and employed, defended the right of labor to combine for remunerative wages and protection from injustice, as well as that of the state to interfere in behalf of shorter hours, sanitary conditions, and by enactment prevent female and child labor in exhausting employments. It urged that the standard of return for labor be not that of mere subsistence, but such as shall facilitate the acquirement of property, allow for provision for age and accident, and give opportunity for moral and intellectual improvement, physical development and rational enjoyment.

The College of Cardinals.—Six cardinals (including Mgr. Rotelli, who died before he received the insignia) passed away during 1891.

Cardinal James Simor, who died Jan. 23, was Archbishop of Gran and Primate of Hungary. He was born at Stuhlweissenburg, Aug. 25, 1813, and commenced life as a shoemaker. At his death he was one of the wealthiest as well as most powerful philanthropists of Austria. A large portion of his revenues was personally distributed by him among the poor, in sustaining the poorer clergy, and in maintaining hospitals, convents, and schools. His influence in state matters was vast.

Cardinal Charles Christofori, who died Jan. 30, had just turned sixty-eight, and was prefect of the Sacred Congregation of Indulgences and Relics. He was one of Pope Leo's selections.

Cardinal Joseph Mihalovitch, who died Feb. 19, at seventy-seven, was made a member of the Sacred College by Pius IX in 1877. He was noted for his charities, his last act being to donate 100,000 rubles to eleemosynary institutions.

Cardinal Cajeta Alimonda, Archbishop of Turin, who died May 24 was noted as "the Lacordaire of Italy." He was born in Genoa in 1818, and was a journalist. He edited the "Cattolico" in Rome, and signalized his administration of that organ by defending Dr. Newman in 1852. His lectures in Genoa in 1864 are by some high authorities declared to be "the finest specimens of oratorical art of the century."

Cardinal Louis Haynold, Archbishop of Kalocsa and Bács, Hungary, who died July 5, was renowned for his learning, statesmanship, and patronage of the arts and sciences. His works are numerous and standard. He was made cardinal in 1879 with Archbishop Alimonda.

Cardinal Rotelli, who died suddenly, Sept. 15, at fifty-eight, was Papal Nuncio at Paris. He was a born diplomat, and to him belongs the credit of reuniting the Armenian Catholics with the Church.

In France.—The laicization of the schools was completed, but the laws relative to the service of clerical students in the army were relaxed. The appearance of "The Catholic

Republican" marked the growing desire to harmonize the Church with the republic on the lines of Cardinal Lavigerie and the Pope.

In Germany.—The elections gave the Catholics under Herr Windthorst 100 representatives, who, uniting with the Conservatives, controlled the legislation of the empire. One of the first results was the return of 16,000,000 marks as interest on the property and appropriations of the Church confiscated during the Bismarckian *Kulturkampf*. Acknowledging this act of justice, Leo XIII wrote Emperor William, and, among other things, said the religious sentiment alone could solve the terrible social problems of the present hour.

The death of Windthorst was a severe blow to the German Catholic cause. It occurred March 14. He was eighty years old, and had led the Center party against Bismarck from 1871. His last words urged his compatriots to wage an uncompromising battle until every principle dear to them was vindicated. He was working for the return of the expelled religious orders and the religious educational question at the time of his death.

The Holy Coat of Treves, presented as a relic of Jesus Christ to the city of Treves by St. Helena, mother of Charlemagne, was exposed to public view at the cathedral, beginning Aug. 23. One million two hundred thousand pilgrims saw it during the period of its exhibition.

In England.—The first week in February witnessed a great debate in the House of Commons on the reading of the "Religious Disabilities Removal Bill," being an effort to abolish the remaining penal laws which prevent Catholics from holding certain high political offices. Mr. Gladstone advocated the bill in one of the finest speeches of his life, but it was beaten on the second reading by a vote of 256 to 223.

The year saw the beginning by the Society of Jesus in England of a great commentary in English on the Scriptures. Twelve Jesuit fathers were designated for the work, which is to cover six years. The first volumes will be published in 1893.

The return of the English Benedictines from Douai, France, after an exile of three centuries, was celebrated early in the year. The order re-established itself at Great Malvern.

In Ireland.—The *liaison* of Charles Stewart Parnell with the wife of Captain O'Shea caused the withdrawal of the support of the Irish hierarchy from the Home-rule leader early in the year. In a public manifesto signed by all the bishops it was declared that Parnell had by his immorality outraged the sentiments of a religious people. As shepherds of the Catholic flock they could not condone the offense by silence. An anti-clerical agitation was immediately started by Parnell and his followers. The verdicts at the polls sustained the stand of the bishops.

Persecutions in China.—In May an anti-foreign uprising took place in Wahu, and the Catholic missions were looted and burned. The priests escaped to boats in the river. The outbreak, conducted by organized secret societies of a Nihilistic nature, spread, and European missions of every denomination were attacked. The native converts suffered terribly, and the

governments of England and France called the attention of the Pekin authorities to the atrocities, intimating that, if the Emperor's forces were unable to cope with the offenders, they would assume the offensive.

In Japan.—The vicarates apostolic into which Japan was divided in 1890 were fully organized into sees in 1891.

In Africa.—Every Catholic congregation in the world contributed toward a special fund for the Christianization of Africa on the feast of the Epiphany (Jan. 6), as ordered by Leo XIII, in his encyclical of Nov. 30, 1890. Seven hundred priests attend to the spiritual wants of nearly 400,000 Catholics in the territory now being opened up to commerce and civilization. Cardinal Lavigerie, who has direction of the mission work, sent many additional "Crusaders" to the assistance of those already in the field.

Spain.—At the beginning of February the restoration of the Convent of Santa Maria la Rabida, three miles from Palos, in which Christopher Columbus and his son Diego found shelter and the friendship of Padre Juan Perez, after the futile mission to the court of King John of Portugal, was commenced by the Spanish Government. It was announced that when restored the edifice would be returned to the Franciscan fathers, from whom it had been despoiled.

The Church in the United States.—Several new bishoprics were created, and a new see was erected in this country in 1891. Rt. Rev. Bishop Katzner was elevated to the archbishopric of Milwaukee, and Rt. Rev. Richard Scanlan, D.D., Bishop of Concordia, was transferred to the diocese of Omaha, vacant by the death of Bishop O'Connor. Rt. Rev. Bishop Hennessy, of Wichita, became Administrator of Concordia. The vicarate of Utah is erected into a diocese with the Rt. Rev. Laurence Scanlan, D.D., heretofore vicar apostolic, as its first bishop; Rev. Thomas Brennan, of Driftwood, in the diocese of Erie, Pa., has been chosen Bishop of Dallas, Texas. The prefecture apostolic of the Indian Territory has been raised to a vicarate apostolic, and Rt. Rev. Theophile Meerschaeft, of Natchez, made vicar apostolic. Rev. Dr. John Brady, of Amesbury, Mass., has been consecrated Bishop of Alabama *in partibus*, and coadjutor to Archbishop Williams, of Boston; and Rev. Dr. P. S. Chapelle, pastor of St. Matthew's Church, Washington, D. C., has been raised to the episcopacy and made auxiliary Bishop of Santa Fé.

Catholics and the Census.—The United States census gave the number of Catholic communicants at 6,250,045 in 10,231 congregations. In this enumeration children who have not received their first communion are not included, so that the estimate of the entire Catholic population may be set down as all the way from 10,000,000 to 12,000,000. Bishop Hogan, of Kansas City, insists that the correct figure is 14,000,000. The seating capacity of the edifices used for church purposes is 3,435,793; and the Sunday services vary from one to nine in each place. The total value of the property held by the Church is \$118,381,516. New York has \$9,000,000 of this; Chicago, \$6,457,064; Boston, \$6,379,078; Brooklyn, \$5,751,907; Newark, \$4,297,482. The 22 dioceses which are credited with upward of 100,

000 communicants, respectively, are: Baltimore, 190,577; Boston, 407,536; Chicago, 324,632; Cincinnati, 129,780; Milwaukee, 111,016; New Orleans, 181,964; New York, 452,626; Oregon, 26,164; Philadelphia, 251,162; St. Louis, 121,621; St. Paul, 193,039; San Francisco, 112,180; Santa Fé, 81,315; total, 2,583,612. The total seating capacity of their churches is 1,143,336.

The Cahensly Agitation.—A remarkable petition, signed by Herr Cahensly and a number of European Catholics, was addressed to the Vatican authorities in June. It called attention to certain alleged derelictions as to Catholic emigrants on the part of the American hierarchy, and particularly pointed out the necessity for national bishops and priests in the United States. The presentation of this memorial caused an outburst of indignation in America at what was considered a desire of foreigners to perpetuate national distinctions and transfer national antagonisms, prejudices, and customs to the New World to the disadvantage of the Church. The American bishops took it as a reflection upon themselves, and Cardinal Gibbons, as their mouth-piece, indignantly denounced the memorial as an unwise interference with the natural order of things, and an entirely uncalled-for emanation of an officious self-constituted European clique whose utterances only gave enemies another opportunity of pointing out the Catholic Church most unjustly as a foreign growth in the republic. The agitation waxed wrathily for some time among the abettors of Cahensly, but it was finally settled by the Holy See rejecting the recommendations of the petitioners.

Mission Work among the Indians.—The discussion over the Indian Appropriation bill in Congress revealed the fact that the sum granted for the support of Indian children in Catholic mission schools was \$162,500 in excess of the total given to all the other denominational schools. The Government appropriation for denominational schools in 1891 amounted to \$579,218, and the Catholic allowance was \$366,348. The rolls of the Catholic Indian schools showed 340 more pupils in attendance for 1891 over the year 1890, the total being 3,353, or nearly three fourths of the whole number of the children attending Indian denominational schools. In the discussion a disposition hostile to the appropriations was developed on the ground that the Government could not give support to sectarian institutions. This brought forward splendid testimonials from members who had visited the reservations—notably Senator Vest, who, in a remarkable speech, declared that the Catholic Church, through the energies, devotion, and sacrifices of her missionaries in behalf of civilization, had proved her title as "the truest friend of the Indian."

Miss Drexel's New Order.—In February Archbishop Ryan received the vows of Miss Kate Drexel in St. Mary's Convent, Pittsburg, and gave the authorization and blessings to the new order founded by her. Miss Drexel took the name of Sister Catherine in religion, and chose the title of Sisters of the Most Holy Sacrament for her order. The object is the evangelization of the negroes and Indians in the United States, and she devotes her interest in the great Drexel estate, estimated at \$8,000,000,

for this work. She has since finished a mother house for the order at Andalusia, Pa., and received quite a number of recruits.

Another new order was introduced by Bishop Hennessy, of Dubuque—the Sisters of the Holy Cross—devoted to teaching in the parochial schools.

Cardinal Manning's Message.—Cardinal Gibbons, on May 18, received the following message by phonograph from Cardinal Manning:

Your Eminence: The Catholic Church in England sends its greetings to you, and to the Catholic Church in America and to all the citizens of the United States, and hopes that we may always be of one heart and one mind, and become one fold of one Shepherd.

HENRY EDWARD,
Cardinal Archbishop.

The School Question.—The great test case of The State of Ohio *vs.* The Rev. Dr. P. F. Quigley, for resisting the compulsory education law, was decided on May 7, in the lower court at Toledo, against the defendant, and a fine of \$25 imposed. Ex-Judge Edmund F. Dunne, for Dr. Quigley, made an earnest plea in defense of the natural right of the parents to educate their children, and the case was taken on appeal to the Circuit Court, which sustained the judgment. It now goes to the Supreme Court, the grounds being that the Ohio Constitution recognizes the natural law in the matter and forbids the compulsory law.

The School Question in Canada.—The Dominion Supreme Court refused to sustain the Winnipeg law abolishing the Catholic separate schools. Under this decision the Catholics again receive the *pro rata* share of taxation for educational purposes.

Felicitous Commemorations.—Rt. Rev. John J. Williams, the first Archbishop of Boston, celebrated the twenty-fifth anniversary of his consecration as bishop on the 11th and 12th of March. There were appropriate ceremonies participated in by the clergy and laity from all parts of New England.

The Catholics of West Virginia celebrated the twenty-fifth anniversary of the ordination of Rt. Rev. John J. Kain, Bishop of Wheeling, July 2.

Rt. Rev. Bishop Vertin, of Marquette, had an equally brilliant jubilee celebration, Aug. 31.

Bishop Hennessy's jubilee in Dubuque, Sept. 13, was the most remarkable event in the history of religious commemorations in Iowa.

The great celebration of the year, however, was that by the aged Archbishop Kenrick, of St. Louis, of the fiftieth anniversary of his consecration as bishop, Nov. 30 and Dec. 1. The Cardinal, a special envoy from Rome, and the hierarchy with few exceptions, participated in the jubilee. The archbishop is the oldest officiating bishop in the world.

Four Great Monuments.—A monument to Father Junipero Serra, founder of the California Franciscan missions, was erected June 3, at Monterey, overlooking the spot upon which he landed in 1770. It is a gift to the city from Mrs. Leland Stanford.

St. John's College, Fordham, N. Y., celebrated its golden jubilee on June 24 by the unveiling of a bronze statue of its founder, Most Rev.

John Hughes, Archbishop of New York. Archbishop Ryan, of Philadelphia, was the orator.

The State of Maryland erected a monument on June 8, at Old St. Mary's, the capital of Catholic Maryland, to Leonard Calvert, the first governor of the colony, and the man to first proclaim religious liberty in the New World.

A marble statue of Pope Leo was unveiled at the Catholic University, Sept. 28.

Other Notable Events.—The new St. Mary's Cathedral, San Francisco, the largest and finest church edifice on the Pacific coast, erected under Archbishop Riordan, at a cost of \$360,000, was dedicated on Jan. 11.

The Dominican Convent, O'Neill City, Neb., was burned in February. St. Mary's Hospital, Rochester, N. Y., was destroyed the same month, but through the heroic actions of the Sisters of Charity all the invalids were rescued.

On March 19, George Parsons Lathrop, the author, and his wife (daughter of Nathaniel Hawthorne) were received into the Church by Rev. Alfred Young, of the Paulist order. Being asked publicly for his reasons, Mr. Lathrop gave them in a letter to the "Independent."

In April the Catholic University at Washington was enriched by the gift of \$400,000 worth of New York city real estate. Rev. James McMahon was the donor, and the endowment was to establish a school of philosophy.

A great mass meeting to further American Catholic history, held in the Academy of Music, Philadelphia, March 31, was presided over by Rev. Dr. Horstmann, and addressed by Cardinal Gibbons, Archbishop Ryan, and Hon. John Lee Carroll. It was practically decided to establish Catholic historical societies all over the country, with a great central library of reference in Philadelphia.

On May 9 the Catholic editors of the United States met in New York and formed a national association.

On May 17 the corner-stone of a new theological seminary for the archdiocese of New York was laid by the Most Rev. M. A. Corrigan near Yonkers, in the presence of a large multitude. The building will cost \$600,000, and its library will be one of the finest in America.

Cardinal Gibbons conferred the pallium upon Archbishop Katzer, of Milwaukee, Aug. 20.

The Father Drumgoole Memorial Church, Mount Loretto, Staten Island, erected in honor of the newsboys' benefactor, was begun on Sept. 13, in the presence of 20,000 persons.

St. Mary's Seminary, Baltimore, celebrated its centenary Oct. 28.

ROUMANIA, a monarchy in eastern Europe. The reigning King is Carol I, born April 20, 1839, son of Prince Carl of Hohenzollern-Sigmaringen. He was elected Domnul or Prince on May 23, 1866, and was proclaimed King on March 26, 1881. His marriage with Princess Elisabeth of Newburg being childless, Prince Ferdinand, born Aug. 24, 1865, the younger son of Prince Leopold, elder brother of the King, was selected as heir and accepted by the Assembly. The legislative body consists of a Senate of 120 members, elected for eight years, and a Chamber of 183 Deputies, elected by the people, divided into three classes of voters, for four years.

Area and Population.—The area of Roumania is 48,807 square miles. The population reported in the census of 1885 was 4,650,823, but the result is officially declared to be below the actual number, which is estimated at 5,000,000. Of this number about 4,250,000 are Roumanians and the rest are Jews, gypsies, Bulgarians, Germans, Magyars, Armenians, etc. The people of Roumanian race in Hungary, Servia, Bulgaria, and European Turkey exceed in number those within the boundaries of the kingdom. The number of marriages in 1890 was 38,654; the number of births, 204,669; the number of deaths, 150,757; excess of births, 53,912. Bucharest, the capital, has 221,000 inhabitants; Jassy, 90,000; Galatz, 80,000.

Finances.—The receipts of the Government for the year ending March 31, 1890, were 159,849,207 lei or francs, and the expenses 158,770,924 lei. Of the total receipts 29,335,000 lei were derived from direct taxation, 41,205,000 lei from indirect taxes, 42,950,000 lei from state monopolies, 23,619,600 lei from domains, 13,527,000 lei from public works, 3,816,000 lei from the various administrative departments, and 8,225,000 lei from other sources. Of the total expenditures 61,441,318 lei were required for the public debt, 63,560 lei the expenses of the Council of Ministers, 4,171,068 lei were allocated to the Ministry of Domains, 6,176,548 lei to the Ministry of Public Works, 12,226,571 lei to the Ministry of the Interior, 22,335,435 lei to the Ministry of Finance, 38,355,598 lei to the Ministry of War, 1,508,766 lei to the Ministry of Foreign Affairs, 17,537,886 lei to the Ministry of Public Instruction, 5,229,544 lei to the Ministry of Justice, and 692,406 lei to the fund for supplementary and extraordinary credits.

The public debt on April 1, 1892, amounts to 969,575,228 lei, requiring for the payment of interest, mostly at 4 and 5 per cent., the sum of 56,985,923 lei in 1891-92.

The Army.—The four army corps are territorially distributed in nine divisions, each composed of two brigades of two regiments. The Dorobantzi, or infantry soldiers, are armed with Martini rifles. The peace effective of the army is 2,936 officers and 48,500 men, with 13,200 horses and 600 cannon. This does not include 71,000 men in the territorial army. In time of war each division can be brought up to a strength of 32,000 men, and the Dobrudja division can be brought up to 20,000 men, making a total effective of 3,500 officers and 148,000 men, with 15,000 horses.

The naval force in 1891 consisted of 1 torpedo cruiser, 2 side-wheel avisos, 5 screw gunboats, 1 torpedo gunboat, and 5 torpedo boats.

The frontier fortifications, erected on the designs of the Belgian Gen. Brialmont, make it very difficult, if not impossible, for a Russian army to force a passage through Roumania to attack Bulgaria or Turkey in case of an Eastern war in which Roumania remains neutral.

Commerce.—The total value of imports in 1890 was 362,791,054 lei, and the total for exports was 275,958,415 lei. Of the imports, Germany furnished 109,252,000 lei, Great Britain 97,559,000 lei, Austria-Hungary 52,716,000 lei, France 39,648,000 lei, Belgium 18,926,000 lei, Turkey and Bulgaria 13,627,000 lei, Russia 8,664,000 lei,

Switzerland 8,011,000 lei, Italy 5,168,000 lei, Greece 904,000 lei, and other countries 8,316,000 lei. Of the exports 161,386,000 lei went to Austria-Hungary, 43,451,000 lei to Belgium, 17,196,000 lei to France, 12,605,000 lei to Germany, 11,610,000 lei to Italy, 9,516,000 lei to Turkey and Bulgaria, 8,913,000 lei to England, 4,583,000 lei to Russia, and 6,653,000 lei to other countries. The imports of textiles amounted to 155,000,000 lei; metals and metal manufactures to 64,500,000 lei; fruits, legumes, etc., 24,300,000 lei; hides, skins, and leather to 20,300,000 lei; minerals, glass, and crockery to 16,500,000 lei; paper manufactures to 13,800,000 lei; drugs and dyes to 9,300,000 lei. Among the exports, cereals stand for 226,100,000 lei of the total value, and fruits for 26,100,000 lei; animals and animal produce for 6,400,000 lei; textile materials for 4,600,000 lei; and all others amounted to 11,800,000 lei.

The vessels entered at the Roumanian ports in 1889 numbered 30,807, of 8,078,938 tons, while 30,586, of 8,789,394 tons, were cleared. The merchant marine consisted of 18 steamers, of 840 tons, and 105 sailing vessels, of 11,040 tons.

Communications.—The state railroads open to traffic in 1891 had a total length of 2,493 kilometres. There were 546 kilometres in process of construction, and 1,009 kilometres more were in contemplation.

The post-office in 1889 transmitted 13,110,372 letters, 3,927,093 post-cards, and 6,739,642 inclosures of printed matter. The receipts were 3,463,462 lei from the post-office, and 2,471,113 lei from the telegraph service, and the expenses of both were 4,015,191 lei. The telegraphs in 1890 had a total length of 5,490 kilometres, with 11,797 kilometres of wire. The number of domestic telegrams sent during the year was 966,570; of external telegrams, 346,079; of telegrams in transit, 44,333.

European Commission of the Danube.—The receipts of the International Danubian Commission, which sits at Galatz, were 3,468,607 francs for 1890, and the expenses were 2,265,716 francs. The debt was paid off before June 30, 1887, and the commission at the end of 1890 had a reserve fund of 1,000,000 francs and 509,473 francs in pension funds laid by. The number of steamers cleared at the Sulsina mouth of the Danube during 1890 was 1,303, of 1,449,257 tons, and the number of sailing vessels was 525, of 90,188 tons, making a total of 1,828 vessels, of 1,539,445 tons, exclusive of passenger steamers. Of the total number 778, of 983,862 tons, were English; 235, of 164,993 tons, were Greek; 417, of 81,585 tons, were Turkish; 109, of 80,560 tons, were Austrian; 55, of 61,674 tons, were French; 60, of 58,560 tons, were Italian; and the rest were chiefly German, Russian, Norwegian, and Dutch. The exports of wheat in 1890 were 4,652,000 quarters; of rye, 468,000 quarters; of maize, 3,578,000 quarters; of barley, 1,283,000 quarters.

Politics.—The ministry, at the opening of 1891, was composed as follows: Gen. G. Mano, President of the Council and Minister of Justice; T. Rosetti, Minister of Justice, and *ad interim* of Public Instruction and Worship; A. Lahovary, Minister of Foreign Affairs; M. Germani, Minister of Finance; A. Marghiloman, Minister of Public Works; G. G. Peucesco, Minister of Agri-

culture, Industry, Commerce, and Domains; Gen. M. Vladesco, Minister of War. The Conservative and Junimist leaders, who by various combinations sought to replace the homogeneous administration of Brătianu, were divided on questions both of home and of foreign policy. The Russophile sentiment, which had no prospect of being realized while the National Liberals were in power, was represented in the new ministerial combinations; but so also was Brătianu's policy of drawing near to the Triple Alliance, which the Russophiles sought to discredit by calling it the personal policy of the King. They looked to Russia as a helper through whose aid Roumanian independence, so far from being extinguished, would be consolidated by the annexation of the Roumanian part of Hungary and the extension of Roumanian protection over the Wallachian communities in Old Servia, Macedonia, and Albania. An Irredentist agitation was started regarding oppressions suffered by the Roumanians of Transylvania at the hands of the Magyars. In domestic affairs some of the members of the old Boyar party were inclined to accept the democratic projects of the Junimists or Young Conservatives and others to ally themselves with the seceding Liberals. The Cabinet was occupied during the early part of 1891 in working out a new tariff, which was adopted and went into force on July 1, 1891, till which date the commercial conventions with various countries were prolonged. The commercial war with Austria-Hungary was abandoned, and low fiscal rates of duty were placed on all articles except a few that compete with industrial products of Roumania, which were subjected to high protective duties. The Junimist leader, Carp, was invited to join the ministry, but declined, because Gen. Mano would not agree to a dissolution of the Senate, which was opposed to reform projects. On Feb. 26 the ministry was defeated in the Senate on an educational bill, and on March 3 a new ministry was formed through a combination of the Catargi and Vernesco groups, in which the Austrophile Junimists had no place. It consisted of the following members: President of the Council, without a portfolio, Gen. J. E. Floresco; Minister of the Interior, Lascar Catargi; Minister of Finance, G. Vernesco; Minister of Foreign Affairs, C. Esarco; Minister of Public Works, C. Olanesco; Minister of Agriculture, Ilario Isvorano; Minister of Education and Worship, G. D. Theodoresco; Minister of War, Col. Jaquies Lahovary. Although composed of Russophile elements, the ministers announced that they would adhere to the foreign policy of their predecessors. The Chamber, on considering the ministerial declaration on March 5, passed a vote of censure, and the King granted to Catargi and his friends the privilege of dissolving the Chamber of Deputies and directing the new elections, which were held in April. In the electoral campaign the Junimists and the Liberals coalesced on a common agrarian platform advocating the distribution of crown lands among the peasantry and the establishment of agricultural banks and of schools and colleges. Notwithstanding their powers of official pressure the Liberal-Conservative Ministerial party failed to secure for itself a majority the seats in the

Chamber, yet it obtained a working majority in the new Chamber, which was convoked in extraordinary session on May 11, by arrangements with independent members. The Minister of War secured a credit of 45,000,000 lei for the completion and armament of the fortifications, thus giving offense to the Czar, whose minister remained away from the celebration of the twenty-fifth anniversary of the King's reign. In June a question arose regarding a contemplated marriage of Prince Ferdinand that affected the dynasty and gave concern to the ministers and the politicians out of office, who were also consulted by the King in regard to the betrothal of the heir to the throne to Helene Vacaresco, a Roumanian lady who was a companion and *protégée* of Queen Elisabeth. The Prince declared that he would renounce his rights to the succession rather than give up the idea of marrying the lady of his choice. The ministers and other statesmen said that he could not succeed to the throne if he married a member of a family that was involved in Roumanian party politics. The common people were pleased with the thought of having a Roumanian Queen. Queen Elisabeth strove to counteract the opposition of the courtiers and politicians until she was prostrated by the excitement of the conflict, and went to Italy to recover from a nervous malady that attacked her, accompanied by Helene Vacaresco. The King was advised to obtain a divorce, or have his wife placed in seclusion, as a way out of the dilemma, but said he would rather abdicate. He went to Italy, and finally persuaded the Queen and his nephew to renounce the project of the marriage. The Catargi and Vernesco groups could not work harmoniously, and on July 13, to prevent open conflicts and a vote of censure, the extraordinary session was closed. On Aug. 2, Theodoresco went out of the Cabinet, and was succeeded by Prof. Pony. The Vernesco section was thereby left in the minority. The friction continued until Vernesco and his followers retired, and Catargi formed a Conservative ministry of the following composition: President of the Council and Minister of the Interior, L. Catargi; Minister of Domains, Gen. Mano; Minister of Foreign Affairs, Alexander Lahovary; Minister of Finance, A. Stirbez; Minister of War, Gen. Lahovary; Minister of Public Works, C. Olanesco; Minister of Justice, Sturdza Skejano; Minister of Public Instruction, Demeter Jonesco. The ministers were sworn in on Dec. 9. The Conservatives alone could not command a majority. The new Cabinet was defeated on a vote of confidence in the Chamber. But the King was unwilling to trust the weak and discredited National Liberal party with the control of the elections that were to take place in February, 1892, and therefore Catargi was allowed another chance. After long negotiations he came to an agreement with the Junimists led by P. Carp, accepting their programme of agrarian and other reforms. Gen. Mano, Sturdza, and Stirbez retired, and on Dec. 30 the Cabinet was reconstructed by the admission of Carp as Minister of Domains, Commerce, and Agriculture; of his disciple T. Tonesco as Minister of Education; of Germani as Minister of Finance; and of A. Marghiloman as Minister of Justice.

RUSSIA, an empire in northern Europe and Asia. The legislative and executive powers are united in the autocratic hereditary monarch of the Romanoff-Holstein-Gottorp family, in which the dynastic succession is through the male line in the order of primogeniture and through female descendants in default of male successors. The reigning Emperor or Czar is Alexander III, born Feb. 25, 1845, who succeeded to the throne at the death by assassination of his father, Alexander II, on March 13, 1881. The heir-apparent is the Czar's eldest son, the Grand Duke Nicholas, born May 18, 1868. The Czar exercises the powers of government through the medium of four consultative and administrative bodies: (1) The Council of State, which examines and passes upon the budget and elaborates the projects of law that the Czar desires to have enacted; (2) the Ruling Senate, which promulgates the laws and is the supreme court of civil and criminal judicature; (3) the Holy Synod, composed of the metropolitan bishops of Kieff, Moscow, and St. Petersburg, the Exarch of Grusva, four or five temporary members chosen from the episcopate, two representatives of the secular or married clergy, one lay member, the superior procurator, whose duties are to see that the decisions of the body, which embraces all affairs of religion, are in harmony with the laws of the empire; (4) the Committee of Ministers, who are the immediate advisers of the Czar. The following were the ministers in office in 1891: Gen. Count Vorontzoff-Dashkoff, Minister of the Imperial House; Nicholas Carlovich de Giers, Minister of Foreign Affairs; Gen. Vannoffsky, the Czar's aide-de-camp, Minister of War; Vice-Admiral Tchikhatchoff, Minister of the Navy; Privy Councilor Durnovo, Minister of the Interior; Privy Councilor Delyanoff, Minister of Public Instruction; Privy Councilor Vyshnegradsky, Minister of Finance; Privy Councilor Manassein, Minister of Justice; Privy Councilor Ostrovsky, Minister of Domains; Privy Councilor von Hübbenet, Minister of Public Works and Railways; Privy Councilor Filipoff, Chief of the Department of General Control. The post of Secretary of State for Finland has been vacant since the death of Baron Brunn in 1888.

Area and Population.—The area of the Russian Empire, according to the calculations of Gen. Strelbitzky, is 8,660,427 square miles. The European provinces of Russia have a superficies of 1,902,227 square miles; Poland, 49,157 square miles; the Grand Duchy of Finland, 144,255 square miles; the Caucasus, 182,457 square miles; the Khirghiz Steppe, with Lake Aral, 755,793 square miles; the Caspian Sea, 169,381 square miles; the trans-Caspian territory, 214,237 square miles; Russian Turkestan, 409,414 square miles; western Siberia, 870,818 square miles; eastern Siberia, 3,044,512 square miles; the Amur region, 888,890 square miles; Saghalien, 29,336 square miles. The Governments of European Russia were estimated in 1885 to contain a population of 85,395,209, divided into 42,999,324 males and 42,895,885 females. An estimate for 1890 makes the population, not including troops, of the kingdom of Poland 8,256,562, of whom 3,977,406 are males and 4,279,156 are females. The population of the Caucasus was estimated at 7,284,567 in 1885,

consisting of 3,876,868 males and 3,407,699 females; that of Siberia and the Amur region was estimated in the same year at 4,313,680, and that of Central Asia, including the Steppe, at 5,327,098. The number of marriages in European Russia in 1888 was 804,084; of births, 4,251,473; of deaths, 2,749,085; excess of births, 1,502,388. In Poland the number of marriages was 67,392; of births, 334,268; of deaths, 204,081; excess of births, 130,237. The population of St. Petersburg, the capital, in December, 1890, was 956,226; that of Warsaw in the same year was 443,426; Moscow in 1885 had 746,469 inhabitants, Odessa 240,000, Riga 175,332, Khar-koff 171,416, Kieff 165,561, Kasan 139,915, Saratoff 122,826, Kichineff 120,074, Vilna 102,845, and Lodz in 1890 had 125,227.

Religion.—The Russian branch of the Greek Orthodox Catholic Church has been governed by its independent directing body since Peter the Great established the Holy Synod with the consent of the Patriarchs of Constantinople, Jerusalem, Antioch, and Alexandria. The Russian Church is organized in 60 bishoprics, of which 48 are in European Russia, including the northern Caucasus; three of these have the rank of Metropolitan Archbishops, but exercise no authority beyond the limits of their sees. Of the other 12 bishoprics 6 are in Siberia, 4 are in trans-Caucasia, 1 in the Aleutian Islands, and 1 embraces the territory of Alaska. When a bishopric becomes vacant the Czar appoints the bishop, selecting one of three names submitted by the Holy Synod. The clergy constitute one of the four classes into which the population is divided. There are two distinct classes: (1) The celibate or monastic clergy, called the "black" clergy, who fill all the important ecclesiastical offices, and are the authorities and preservers of the traditions and forms of the Church; and (2) the "white" clergy, who are educated at the expense of the state in the seminaries at St. Petersburg, Moscow, Kieff, and Kasan, and must marry before they can receive an appointment. There are, according to the latest statistics, 1,418 archpriests, 34,345 priests, 6,810 deacons, and 48,371 assistants. Those who fail in the examination for the priesthood enter the diaconate, or, if they fall below the standard for that division of the clergy, become psalm-singers or assistants. The monastic system stands in high repute, and the chief occupation of the monks, of whom there were 18,128, including novices, in 1889, is to go through liturgical and devotional exercises. The formalism of the orthodox worship and the debasement and immorality of the "white" or parochial clergy have, in spite of persecution, driven a large proportion of the people into the schismatic sects. Of these, the most important are the Raskol dissenters, estimated at 14,000,000 souls, and the Stundists, who number about 2,000,000.

Finances.—The chief sources of revenue are direct and indirect taxes, state domains and salt mines, and the salt and tobacco monopolies. In 1890 the ordinary revenue was 943,686,000 rubles, and the extraordinary revenue 103,687,000 rubles, a total of 1,047,373,000 rubles, which exceeded the budget estimated by 99,504,000 rubles. The ordinary expenditures were 877,-

780,000 rubles, and the extraordinary 178,732,000 making a total of 1,056,512,000 rubles, which was 108,643,000 more than the estimated amount. From direct taxes the receipts were 89,184,000 rubles; from indirect taxes, 335,987,000 rubles; from monopolies, 34,228,000 rubles; from domains, etc., 85,354,000 rubles; other receipts, 198,933,000 rubles. The ordinary expenditures included 262,684,000 rubles for the public debt, 2,208,000,000 rubles for the superior governing bodies, 12,098,000 rubles for the Holy Synod, 10,560,000 rubles for the Ministry of the Court, 4,811,000 rubles for the Ministry of Foreign Affairs, 228,110,000 rubles for the Ministry of War, 40,693,000 rubles for the Ministry of Marine, 109,214,000 rubles for the Ministry of Finance, 24,249,000 rubles for the Ministry of Domains; 76,854,000 rubles for the Ministry of the Interior, 22,639,000 rubles for the Ministry of Public Instruction, 56,290,000 rubles for the Ministry of Communications, 22,861,000 rubles for the Ministry of Justice, 3,873,000 rubles for the Control Office, and 1,136,000 rubles for the imperial stud. The ordinary receipts for 1891 were estimated in the budget at 897,198,000 rubles; *recettes d'ordre*, 3,558,626 rubles; extraordinary receipts, 13,750,139 rubles; funds available for covering the deficit, 47,794,812 rubles; total, 962,302,521 rubles. The estimate of the ordinary expenses was 895,330,395 rubles; *dépenses d'ordre*, 3,558,626 rubles; extraordinary expenses, 63,413,500 rubles; total, 962,302,521 rubles. Including the Polish debt and the various railroad loans, the Government, on Jan. 1, 1891, owed 1,008,118,100 rubles payable in specie, 2,845,291,000 rubles payable in paper currency, 14,100,000 guilders borrowed in Holland, £21,997,900, and 545,984,000 francs. The expenditure on the debt in 1891 was 256,742,041 rubles.

The Army.—The young men of European Russia are required to serve five years in the active army, and for thirteen years more they belong to the reserve, and then for five years in the first ban of the territorial army. In Turkestan and the Amur region and for the marine troops, the period of active service is seven years, and for the northern Caucasasia and the trans-Caspian territories three years. The men of the reserve are obliged to exercise twice for six weeks. Men who escape service in the permanent army in the drawing of lots, as well as those who have passed through the reserve, form part of the first ban of the territorial army till they are forty-four years old; they may be called out for six weeks' drill up to the age of twenty-five, and in time of war are used to complete the permanent army. The second ban is composed of those who are not fit to serve in the regular army. The Cossacks pass through a preparatory training for three years in their native villages, then perform four years of active service in the first ban, after that are inscribed in the second ban for four years, and may be called out to exercise three weeks annually, belong for the succeeding four years to the third ban, which may be called once into camp for three weeks, and for five years longer are enrolled in the category of depot troops, and as such may be drawn into the service to complete the armed forces in case of war. The clergy are entirely exempt, and physicians, veterinarians, and pharmacists are

not called on to serve in time of peace. Since 1890 the annual contingent of recruits has been 260,000, besides 2,400 Cossacks of the Caucasus, and the number of men of the first ban of the territorial army called out for the annual exercises has been fixed at 100,000.

The peace effective of the Russian army is as follows: 888½ battalions of infantry, numbering 15,764 officers and 429,323 men; 356 squadrons of cavalry, consisting of 2,262 officers and 59,916 men; 350 batteries of field artillery, with 2,973 officers and 60,787 men; 44 companies of engineers, with 772 officers and 23,547 men; 18 battalions and 84 parks of military equipages with 428 officers and 7,254 men; 125 battalions and 33 batteries of reserve troops, having 4,225 officers and 76,280 men; 28 infantry battalions, 544 battalions of foot artillery, and five siege batteries of fortress troops, with 1,742 officers and 40,501 men; 56 squadrons and 2 batteries of depot troops, with 202 officers and 4,836 men; 6½ battalions of Cossack infantry, numbering 150 officers and 4,956 men; 11 squadrons and 275 sotnias of Cossack cavalry, numbering 1,912 officers and 44,712 men; 20 batteries of Cossack horse artillery, having 100 officers and 3,340 men; and 28 sotnias of Caucasus militia, numbering 71 officers and 3,858 men. The total strength is 80,561 officers and 787,372 men, or 818,033 combatants, with 155,537 horses. The war effective, not counting the territorial army and the Cossack troops of national defense, is 40,739 officers and 2,371,007 men, a total of 2,420,746, with 835,863 horses.

The Navy.—The Baltic fleet in 1891 comprised 37 armored vessels, including 3 of 11,000, 8,800, and 6,590 tons, not yet completed; 32 unarmored fighting ships; 51 other steamers, and 114 torpedo boats. In the Black Sea the naval force consisted of 8 armored vessels, including 1 in course of construction, 21 unarmored vessels, 12 unarmed steamers and 36 steam sloops, and 25 torpedo boats, making in all 102 vessels, exclusive of the volunteer fleet of Odessa. In the Caspian, 8 armed steamers and 7 others are maintained, and in Siberia there are 34 vessels, including 19 gunboats and 8 torpedo boats. On Oct. 20, 1891, three new ironclads were launched at St. Petersburg. One is the "Navarin," a barbette battle-ship of 9,476 tons displacement, propelled by twin screws of 9,000 horse-power, having a partial belt of 16-inch armor, and intended to mount two 52-ton guns in each barbette, besides eight 6-inch and ten quick-firing guns, and to be fitted with 6 torpedo tubes. The other two are belted gun vessels of 1,500 tons, to be armed each with one 9-inch, one 6-inch, and eight quick-firing guns, and with two torpedo-discharging tubes.

Commerce.—The value of the imports from European countries in 1890 was 361,400,000 rubles, not including precious metals; from Finland, 13,400,000 rubles; from Asia, 41,300,000 rubles. The exports of merchandise to European countries were 610,400,000 rubles in value; to Finland, 16,700,000 rubles; to Asiatic countries, 76,800,000 rubles. The total value of imports was 416,069,000 rubles, of which Germany furnished 114,635,000; Great Britain, 92,935,000; the United States, 53,393,000; China, 29,060,000; Austria-Hungary, 17,802,000; France, 17,254,000;

Persia, 11,632,000; Italy, 9,153,000; Turkey, 7,961,000; Belgium, 7,085,000; Sweden and Norway, 6,436,000; and the Netherlands, 4,858,000 rubles, about 44,000,000 rubles coming from Roumania, Denmark, Greece, and all other countries. The total value of the merchandise exports was 703,937,000 rubles, of which Great Britain took 203,663,000; Germany, 177,940,000; France, 48,366,000; Holland, 43,538,000; Italy, 30,338,000; Austria-Hungary, 30,245,000; Belgium, 27,388,000; Turkey, 16,772,000; Sweden and Norway, 12,650,000; Persia, 10,927,000; Denmark, 8,322,000; Greece, 8,303,000; Roumania, 7,192,000; China, 1,189,000; the United States, 927,000; and all other countries, 76,177,000 rubles. The imports and exports through the Russian ports of the Baltic were 171,400,000 and 179,100,000 rubles respectively; across the Finland frontier, 13,400,000 and 161,700,000 rubles; across the European land frontiers of Russia, 135,200,000 and 165,800,000 rubles; by the Black Sea ports, 53,800,000 and 259,800,000 rubles; by the White Sea ports, 1,000,000 and 5,700,000 rubles; across the Asiatic frontiers, 41,300,000 and 76,800,000 rubles. The chief imports by way of the European frontiers were textiles of the value of 119,468,000 rubles; metal wares and machinery, 35,028,000; raw metals, 26,498,000 rubles; tea and coffee, 24,358,000 rubles; dyeing materials, etc., 14,590,000 rubles; coal, 12,454,000 rubles; hides, skins, and fur skins, 11,281,000 rubles; apparel and trimmings, 8,954,000 rubles; alcoholic beverages, 8,988,000 rubles. The chief exports by the way of the European frontiers were cereals of the value of 308,622,000 rubles; textile materials and manufactures, 93,738,000 rubles; lumber, 53,024,000 rubles; linseed, 45,119,000 rubles; animals, 10,832,000 rubles; hides, skins, and peltry, 10,697,000 rubles; bristles, 10,477,000 rubles; sugar, 6,727,000 rubles; alcoholic beverages, 6,070,000 rubles; petroleum and naphtha, 4,129,000 rubles; metals, 2,231,000 rubles. The chief imports from Asia were tea of the value of 16,154,000 rubles, fruits and legumes for 3,554,000 rubles, textile materials for 2,325,000 rubles, and tissues for 2,433,000 rubles. The exports to Asia consisted of cereals for 25,311,000 rubles, tissues for 4,332,000 rubles, textile materials for 3,041,000 rubles, and a great variety of other merchandise. The imports of precious metals from Europe were 20,663,000 rubles, and from Asia 2,464,000 rubles, while the exports to Europe were 17,832,000 rubles, and to Asia 3,096,000 rubles.

Navigation.—At the ports of the Baltic in 1889 there were 3,541 vessels entered with cargoes and 2,790 in ballast, while 5,660 were cleared with cargoes and 586 in ballast. In the White Sea ports 311 were entered and 623 cleared with cargoes, and 320 entered and 2 cleared in ballast. In the Black Sea and the Sea of Azov 1,752 were entered with cargoes and 4,757 cleared, while 3,876 were entered in ballast and 913 cleared. In the Caspian Sea 792 were entered and 684 cleared with cargoes, and 139 entered and 251 cleared in ballast. Of 13,521 vessels, the total number entered at all the ports, 9,465 were steamers, and of 13,476 vessels cleared, 9,457 were steamers. Of the vessels entered, 2,415 were Russian, 4,174 English, 1,720 German, 1,479 Swedish and Norwegian, 895 Danish, 740 Turk-

ish, 642 Austrian, and 146 Dutch, etc. The merchant marine in 1887 numbered 2,614 vessels propelled by sails, of 361,572 tons, and 357 steam vessels, of 130,458 tons.

Railroads, Posts, and Telegraphs.—The Russian network of railroads on Sept. 1, 1890, had a total length of 26,554 versts or 28,327 kilometres, not including the railroads of Finland or the trans-Caspian line of 1,433 kilometres.

The post-office in 1889 forwarded in the internal service 163,500,000 letters, 19,307,000 postal cards, 21,708,000 pieces of printed matter, and 12,081,000 money letters of the declared value of 15,496,332,000 francs. In the international service the number of letters was 24,316,000; of postal cards, 3,725,000; of printed inclosures, 10,039,000. The receipts were 79,773,924 francs, and the expenses, including those of the telegraph service, were 97,313,972 francs. The receipts from telegraphs were 40,551,108 francs. The state telegraph lines had a total length of 115,900 kilometres, with 224,093 kilometres of wire. The number of domestic dispatches was 8,876,254; of international dispatches, 689,477 sent, 730,925 received, and 146,872 in transit; of official dispatches, 628,054.

Finland.—The Grand Duchy of Finland is a constitutional monarchy which was united with Russia under the same sovereign in 1809. The Constitution of 1772 and 1789 was confirmed by Alexander I in a manifesto issued on March 27, 1809, and subsequently on Dec. 24, 1825, March 3, 1855, and March 14, 1881, in the proclamations of Nicholas I, Alexander II, and Alexander III. In the National Assembly the four estates of the nobility, the clergy, the peasantry, and the towns are represented. The Governor-General and commander-in-chief of the military forces is Count T. Heyden. The population on Dec. 31, 1889, was 2,338,404, of which number 1,152,111 were males and 1,186,293 females. Helsingfors, the capital, had 65,535 inhabitants. The number of marriages in 1889 was 16,099; of births, 77,881; of deaths, 45,679; excess of births, 32,202. The receipts of the Government in 1891 were estimated in the budget at 55,603,138 Finland marks, the value of the mark being the same as that of the French franc. The clergy, superior judges, and certain civil officials collect their pay directly without the intervention of the treasury. The debt on Jan. 1, 1891, amounted to 82,129,697 marks. The value of the external commerce in 1890 was 140,600,000 marks for imports and 92,400,000 marks for exports. Of the imports, 47,300,000 marks came from Russia, 44,800,000 marks from Germany, 23,000,000 marks from Great Britain, and 12,300,000 marks from Sweden and Norway. Of the exports, 36,400,000 marks went to Russia, 17,700,000 marks to Great Britain, 11,000,000 marks to Denmark, 7,300,000 marks to Sweden and Norway, and 6,000,000 marks to Germany. Chief among the imports were cereals of the value of 20,800,000 marks, coffee of the value of 12,500,000 marks, iron goods of the value of 9,700,000 marks, and next in order woolen goods, cottons, sugar, and machinery. The principal exports were lumber of the value of 36,400,000 marks, butter of the value of 13,600,000 marks, and paper of the value of 8,600,000 marks. The railroads, on Sept. 1,

1891, had a total length of 1,876 kilometres. The merchant marine in 1889 consisted of 1,799 sail vessels, of 235,161 tons, and 336 steamers, of 17,454 tons. There were 16,056 vessels, of 1,985,147 tons, entered and 16,474, of 2,027,111 tons, cleared at the ports of Finland during 1890.

The Trans-Siberian Railroad.—The project of a railroad across Siberia has been in contemplation for twenty years. In 1887 a commission was appointed by the Emperor to study the subject, and preparatory surveys were made. The commission unanimously recommended the construction of the line both on strategical and on commercial grounds. The Government has decided to build the line at its own expense, rejecting offers of foreign capital, unless, perhaps, Gen. Annenkoff's plan for enlisting French capital be ultimately adopted. The railroad is expected to benefit Siberia immensely, to promote colonization, to make Asiatic Russia a source of revenue instead of a drain on the imperial treasury, and to consolidate and strengthen Russian extension in Asia. The middle route, rather than the northern or the southern routes that were proposed, has been adopted. The line starts from Zlatausk and Miask, where the European line terminates at the Ural mountains, and will run close to the fifty-fifth parallel of north latitude as far as the Yenesei river, with branches about 60 miles long to connect it with the important towns of Tomsk and Omsk. Thence it will take a more southerly course to Irkutsk, follow the southern shore of Lake Baikal and the valley of the Seeling river, cross the valleys of the Lena and the Amur to Lake Collan, where excellent coal has been found, thence run eastward to the steamboat station of Sretjinsk on the Amur, and along that river southeastward to Khabarofka, then turn southward along the right bank of the Ussuri to Graffsky, and terminate at the port of Vladivostok in latitude 43°. The total length is 5,613 miles. The line has been surveyed, with the exception of 828 miles at the western end and 1,525 miles between Sretjinsk and Graffsky. The section from Miask to the river Obi, crossing the rivers Tobal, Ishim, and Irtysh, and passing near the towns of Koorgan, Tukulinsk, Kaensk, and Kolivan, is expected to cost \$33,500,000, or about \$33,880 a mile. The section of 1,114 miles from the Obi to Achinsk will cost \$38,820,000, or \$34,850 a mile. The Lake Baikal section of 194 miles and the trans-Baikal section of 669 miles present many engineering difficulties, as they pass through a mountainous country; the cost is estimated at \$13,000,000, or nearly \$67,000 a mile for the one, and \$31,160,000, or \$36,580 a mile for the other. The section from Sretjinsk to Graffsky, though it has not been surveyed, passes through a country well enough known to permit an estimate of the expense, which will not exceed \$49,780,000, or \$32,620 a mile. The last section, from Graffsky to Vladivostok, 255 miles, will cost nearly \$50,000 a mile, or \$12,750,000 altogether. This section and the short length of 60 versts across the Ural mountains from Miask to Chelabinsk, it was decided, should be built first and begun in 1891. Of 7,000,000 rubles allotted to railroad construction in the budget, 500,000 rubles were applied to preliminary work on the western end, 2,900,000 rubles to construction of the Ussuri section, 200,000 ru-

bles to surveys between Chelabinsk and Tomsk, and 100,000 rubles to surveys from Graffsky to Khabarofka. For the Ussuri section it was necessary to transport all the materials by sea from Russia to Vladivostok. The first rail was laid by the Czarevich on May 24, 1891.

The New Loan.—Formerly Russian securities were largely held in London. In recent times Berlin has been the banking center for Russian commerce and the chief source of Government loans. The financial relations between Prussia and the Russian Empire have been of the most intimate character for many decades. In 1884 the Seehandlung, which is an official financial institution in Prussia, headed the syndicate which placed a loan of \$75,000,000. In 1886, when the Russian scare in England caused British investors to unload enormous quantities of Russian bonds on the Continental bourses, the Berlin financiers sustained the market, preventing a heavy fall, and absorbed the Russian funds at cheap prices, thereby gaining what was considered a victory over the London bankers. Up to 1887, the year in which Vyshnegradsky became Russian Minister of Finance, the investments of German capital in Government funds, preference shares of guaranteed railroads, and other Russian securities, were estimated at \$1,000,000,000. At that time a coolness arose in the political relations between Russia and Germany, in the course of which Chancellor von Bismarck instigated a campaign against Russian credit abroad. It still stood so high in Berlin that he failed to accomplish his purpose, until he practically prohibited transactions in Russian securities by refusing to allow the Imperial Bank to accept them as collateral for advances. In spite of a constant war carried on in the inspired German and English press, which attacked the good faith of the Russian Government, saying that loans raised for the conversion of debt or for reproductive works were used for augmenting and equipping the army or for the construction of strategic railroads, and that interest on the debt was paid out of fresh loans, the credit of the Russian Government has steadily improved under the management of M. Vyshnegradsky, who established a bond of financial friendship with France when he found the markets of London and Berlin closed to him. The German market was not entirely closed, because German investors were most familiar with the strength of the financial position of Russia, and feared only the consequences of a war. Many Germans held on to their Russian investments, and when loans and railroad bonds bearing a high rate of interest were converted, assistance was received from the German money market, although the main supply of money came from France. In 1889 and 1890 loans to the amount of 1,800,000,000 credit rubles were taken by French syndicates. By degrees the German investments in Russian securities found their way into France, until the aggregate holdings of the French reached about 2,500,000,000 rubles. The English have persistently refused to subscribe to the new Russian loans; but the French support was so efficient that few governments have been able to borrow more cheaply. In 1891 the Russian Finance Department called for a new 3-per-cent. gold loan of 500,000,000 francs for the construction of rail-

roads. The Rothschilds, who for generations have held the prescriptive right to act as the chief financial agents of the Russian as well as of other governments which apply for loans in the great money centers of Europe, agreed in May to take the whole loan at 81½ and issue it at 84, but stipulated that they should use their discretion as to the time and manner of placing it on the market. The Paris branch of the Rothschilds acted alone in the transaction. The Russian minister would not agree to the terms, because he feared that they might keep the bonds in their possession to use for their own purposes at some future juncture as a means of depressing Russian credit. The English agitation regarding the Russian persecution of the Jews was renewed at this juncture, and at the request of Baron Rothschild, of London, the French firm announced that it would have no financial dealings with the Russian Government until it ceased deporting Jews from the interior to the western pale. In France the effervescence of political feeling caused by the renewal of the Triple Alliance and the Franco-Russian *rapprochement*, that was afterward signalized by the visit of the French squadron in Cronstadt, created a situation in which the refusal of French bankers to assist Russia seemed an act of subservience to Germany and treason against France. Encouraged by the newspapers, some of the financiers of Paris proposed to place the loan by open subscription in defiance of the money power of the Rothschilds. After the Cronstadt meeting the French public clamored for the loan, and the Russian Government had immediate need of money to draw on abroad in order to aid traders who were unable to meet their foreign engagements owing to the failure of the crops. An arrangement was therefore made with the *Crédit Foncier*, the *Crédit Lyonnais*, and other financial institutions in France, and with the *Hopes of Amsterdam*, the Bank of Copenhagen, and a firm in London to take the loan at 80, and to open the books on Oct. 2 for public subscriptions at 79½, which yields on 3½ per cent. per annum. English subscriptions were desired merely for the purpose of obtaining quotations on the London Stock Exchange. When the Berlin houses of Mendelssohn and Robert Warschauer agreed to enter the syndicate the German press raised an outcry, and called on the Government to forbid them to invite subscriptions to a loan that would probably be used to arm an enemy. The Government declined to interfere officially, but nevertheless no bonds were offered in Berlin. The price was very little better than the German 3-per-cents., which were quoted at 84. In France, however, the Russian loan afforded a considerable profit as compared with French *rentes*, which were selling at 96. The French Government declined to allow the provincial agencies of the *Crédit Foncier* to advertise the loan, for that would give it an official character and give rise to much criticism abroad. The application of the loan was announced to be the repayment of advances for recent construction and the making of lines from Moscow to Kazan and from Kovrisk to Voronge and the Petrozavodsk line. Advertised in France as the loan of the Russo-French alliance, it was subscribed for seven times over in that country alone. In Holland,

Denmark, and England and in Russia the takings were small. Soon after the allotments were made German bankers sent orders to sell Russian securities in Paris, and as they begun and continued to fall and Spanish and Italian stock also dropped, until a panic was feared, it was believed in Paris that the Rothschilds were bearing the market.

The Russification of Finland.—When the Finnish Diet was opened on Jan. 28, 1891, the President of the Upper House declared that the people were agitated by the fear of impending trouble and danger, and in the Lower House the Speaker, who represents the peasantry, said that a feeling of gloom and depression pervaded the land, but that the Finnish people nevertheless did not despair of preserving their legal and constitutional rights. These outspoken and significant expressions called forth a rescript from the Czar, in which he said that a false interpretation of the principles on which rest the relations of the grand duchy to the supreme authority had caused measures that he had proposed for obtaining a closer union of the grand duchy with the other parts of the empire to give rise to an excited state of feeling. The rights, privileges, special ecclesiastical order, and distinct laws of Finland have been maintained and in many particulars further developed since the country became an imperial Russian possession. Nevertheless the disagreement of certain statutes of Finland with the general laws of the state had given cause for a perverted conception of the significance of measures undertaken for objects common to all parts of the Russian state. Therefore he authorized the Governor-General to assure the people of Finland that he would preserve unimpaired the rights and privileges granted by Russian monarchs, and had no intention of changing the principles of the existing internal administration of the country. The contemplated measures aim at nothing more than fortifying the state relations between Finland and Russia. One of the institutions distinguishing the semi-independent administration of the grand duchy was the Committee for Finnish Affairs attached to the department of the Secretary of State for Finland in St. Petersburg. To the expressed regret of the Finnish press this consultative body, composed of two members delegated by the Finnish Senate and one nominated by the Emperor, was abolished from Oct. 1, 1891. To reassure his Finnish subjects the Czar visited Helsingfors in July, but was disappointed in not receiving an enthusiastic reception. In order to put a check upon the opposition of the Finnish press to the Government reforms, new and stringent regulations were issued whereby newspapers can be warned or suppressed without warning by the Governor-General, and stricter guarantees are required before permission to establish new papers or periodicals is granted. In October an imperial ukase was published putting in force various reforms designed to assimilate Finland to Russia. They provide that the Secretary of State for Finland shall submit to the Russian ministers for consideration all Finnish legislative proposals which affect the interests of Russia. Further, in future all imperial decisions and projects of law relating to Finland and all

bills to be laid before the Finnish Diet, as well as the resolutions and petitions of the Finnish Diet, are to be communicated to the Governor-General in the Russian language instead of in the native tongue. Another ordinance directs that only Russians who have graduated at a university or Finlanders who have had a superior education and thoroughly understand the Russian language shall be appointed to posts in the office of the Secretary of State, and in the Chancellery of the Governor-General.

Edicts against the Jews.—The Czar in the summer of 1890 issued edicts against the Jewish hucksters, money-lenders, and liquor-sellers in the interior of Russia, which were carried out with much harshness for a time, after which he delayed for some months his decision regarding the revival of the old law forbidding Jews to acquire a permanent residence outside the governments on the western border. In the beginning of 1891, on the recommendation of a commission appointed to inquire into the relations between the Jews and the state, he decided that the edict of removal should be carried out. In the beginning of February all the Jewish traders of the city and district of Novgorod were ordered to leave with their families. Newspapers which remonstrated against the policy of the Government were suppressed. The first guild of merchants in St. Petersburg had a legal right of residence, and the privilege of maintaining any number of Jewish servants, but holders of certificates of the guild who had no business of their own were expelled in April, and a general clearance of the Jewish population in the cities of central and eastern Russia was begun. They were expelled even from the trans-Caspian provinces and from the Caucasus. In Kieff Count Ignatieff banished artists and musicians. The decree for St. Petersburg included artisans, chemists, merchants of the second and third guilds, and money-changers. The sudden banishment of many thousands of Jews from Moscow and the decree ordering a great many more to leave within a month caused severe distress and suffering and a commercial crisis that involved all the Christian merchants. The Jews had to sell all their property for almost nothing. Hundreds applied for baptism in order to evade the decree. They were surrounded in their houses by soldiers and hurried off to the railroad, chained together sometimes like Siberian exiles. The authorities were at a loss whither to send a large proportion of them, for a great many families had lived in Moscow for generations and had no other domicile. Children were in many instances separated from parents and husbands from wives. It was only in Moscow that scandalous cruelties were practiced, and this was because the chief of police, after the removal of Prince Dolgorukoff, who had carried out none of the edicts, wished to rid the city of as many Jews as possible before the arrival of the Grand-Duke Sergius as Governor-General. But elsewhere laws were more strictly enforced than before. The law prohibiting Jews from owning or leasing land or acquiring manufacturing was extended to the whole empire outside the pale. In Kieff, Odessa, and other commercial towns where the trade is principally in the hands of Jews the authorities herded the

poorer Hebrews scattered over the districts in the *ghettos*, which became so crowded as to cause an exodus to Turkey and other countries. In the latter part of May a general order for the expulsion of all foreign Jews from southern Russia was issued, in consequence of which the poor Jews of Odessa and of the whole province of Kherson and of the Crimea and many in moderate circumstances realized what money they could in order to emigrate. In all the forcible expulsions the police used their discretion as to what Jews should be sent back to the pale, their orders being not to molest respectable persons following useful occupations, but to rid the towns of the destitute and inefficient, and of usurers and petty traders and those engaged in disreputable pursuits. The manner in which the decrees were carried out by corrupt officials produced a panic, and led to the emigration of great numbers besides those notified to depart. The regulations against the Jews were relaxed in July, but, owing to the crowding of them within the pale and the impending famine, the emigration continued. The German and Austrian authorities refused to admit such as were destitute; some were sent back as pauper immigrants from the United States; the Turkish Government would allow none to land at Jaffa or Beyrut who were likely to become a burden on the community; and the British consular agents gave warning that there was no work for them in England. Baron Hirsch, the Vienna capitalist who built the Turkish railways, offered to give \$15,000,000 to aid the exiles in finding new homes and especially to establish agricultural colonies, selecting the Argentine Republic as the most favorable country. Arnold White, who went to Russia to study the subject and report to him, found the Russian ministers anxious to further the plan of promoting emigration, and willing to countenance the formation of committees to supervise and direct the movement. At his instance they removed the regulation requiring every emigrant to go to the place in which he is inscribed as a resident and procure a passport, for which he had to pay a fee of 10 rubles. Mr. White visited the Hebrew agricultural colonies planted by the Czar Nicholas in the Government of Kherson, where he found that Jews, contrary to the view officially adopted in Russia, are capable of becoming industrious and skillful farmers. Baron Hirsch bought 7,000,000 acres of the best agricultural land in Argentina, on which he intends to settle 4,000 or 5,000 families of expatriated Russian Hebrews. He made an experiment with 400 picked subjects, who showed such aptitude that he is convinced that a taste for agriculture can be developed among people of his race. Every family will receive 150 acres of land, on which they will be supported for a year, and for which after another year they must pay a small rent. No member of the community will be allowed to trade or to sell anything except the products of his toil.

The persecution of the Jews was only part of the general policy instituted by M. Pobiedonostseff, Chief Procurator of the Holy Synod and other members of the Old Russian party who have the ear of the Czar, of harrying and crushing all foreigners and all dissenters from

the orthodox faith. The flourishing German manufacturers and agriculturists in southern Russia, German only by descent, were harassed until they were financially ruined by the officials. Polish engineers who had built and managed the Trans-Caspian Railroad were suddenly dismissed, and all Poles, Germans, Jews, and foreigners of all kinds who had settled in that part of the empire were incontinently driven out. Even the Mohammedan Tartars were oppressed in various ways and were not allowed to read the Koran, except in an expurgated translation. Among the new regulations affecting the German Lutherans of the Baltic provinces was one forbidding any but Russians from practicing law. The persecution of schismatics was redoubled in severity. The Stundists and Baptists of Kieff and other places were hunted out and banished to trans-Caucasia.

Famine.—The wheat and rye crops failed in 1891 in the provinces of Tula, Tamboff, Voronezh, Nijni Novgorod, Riazan, Simbirsk, Kursk, Orenburg, Penza, Samara, Saratoff, Kazan, and Viatka, and partly failed in Moscow, Kaluga, Orel, Ufa, Astrakhan, Kostroma, Kherson, Perm, Khar-koff, Tobolsk in western Siberia, and in others. It was estimated in the summer that the wheat crop was 25 per cent., or 50,000,000 bushels, short of the average, leaving 50,000,000 bushels, instead of the average of 100,000,000 bushels, for export, if the home consumption remained the same as in ordinary years. The rye crop was 30 per cent., or 180,000,000 bushels, less than the average crop of 600,000,000 bushels. An average of 60,000,000 bushels has been exported in past years to Germany, Austria, and other countries, and therefore if no rye was exported at all the people would have only about three quarters of the quantity usually consumed to sustain them till the summer of 1892, for the stocks left over were very small. With no crops to supply their staple food or barter for other necessities or pay their debts, the peasantry of the afflicted provinces were soon reduced to bankruptcy and want, and their position was made more desperate by rains, which caused the potatoes to rot and the ravages of the cattle disease. On Aug. 11 the Czar issued a ukase prohibiting the export of rye, rye-wheat with more than 8 per cent. of rye, or bran by way of the Black Sea or Baltic ports or the western land frontiers. The transport rates for wheat and potatoes to the necessitous provinces were compulsorily lowered on all the railroads. The prohibition of rye exports was felt severely in Germany, which in ordinary years imports rye largely from Russia and in this year had a very short crop. During the days that were left the Jewish merchants exported rye to Germany up to the full capacity of the railroads, and after the ukase went into force they sent it abroad in the form of bread until the practice was interdicted. By a second manifesto exports from Finland were forbidden. The spirit bounties were removed with the object of lessening the consumption of grain, potatoes, and Indian corn for distillation, and measures were taken to prevent rye in particular from being made into spirits. Already in August great numbers of people were without their usual food, and some died from starvation. They tried to nourish themselves with wild fruits and the seeds of weeds, or with

grass and leaves. In Simbirsk and Kazan they ate a bread made from ground straw and pig-weed. At Libau, Vilna, and Smorgoni peasants and poor Jews carried out the Czar's edict before the time by stopping rye that was being carted to the railroad and unloading it at the town hall. Similar grain riots took place at Orel, at Vitebsk, at Düna-burg, and other stations on the line leading to the frontier. The Government and the Zemstvos spent large sums in supplying seed for the next crop and food to keep the people through the winter. The industrious peasants of the valley of the Volga were reduced to the last stages of destitution before succor was brought to them, and whole villages perished before food, which was hurried forward before the freezing of the river, could be distributed. The extent of the famine-stricken area, embracing the central and southeastern provinces, was about 30,000 square miles, containing a population of 25,000,000 souls. The sum of 184,000,000 rubles was estimated to be what was required to keep this population from starving and to supply seed grain. This region comprises the greater part of the plain of Great Russia up to the Volga and the low plain east of that river. In the northern and middle section rye is the principal crop, and in the southern provinces wheat is grown and is eaten by the people. The greater part of the black soil is found in these provinces, which constitute the most fertile and one of the most thickly populated regions in the empire. The continental character of the climate, the scanty rain-fall, the prevalence of dry winds, and the absence of forests and mountains to check the wind and retain moisture make the effects of an inclement season widely felt. The winter of 1890-'91 was unusually cold; frosts occurred late in the spring when the ground was denuded of snow, and they were followed by a long drought with easterly winds. The cereal crops for the whole of European Russia and Poland aggregated 517,000,000 against an average of 645,000,000 hectolitres, leaving a deficit of 128,000,000 hectolitres, or nearly 20 per cent. The effect of the rye ukase was to prevent the export of about 50,000,000 hectolitres that would otherwise have gone abroad, but at the same time would have put 200,000,000 rubles in the pockets of the peasantry. The Government gave 24,000,000 rubles and afterward 55,000,000 more to the Zemstvos for relief purposes. The price of rye doubled. The prohibition of exports was extended to other cereals until Nov. 3, when the decrees were revoked. Merchants and all classes of the nobility made voluntary sacrifices, and the Zemskie Natchalniki, the heads of the local governing bodies, acted as agents of the Red Cross Society to distribute food, all the members of the Zemstvos and the country gentry aiding in the work. The entire population of the thirteen stricken provinces was under the inspection of these volunteer charity commissioners, who only gave relief, as far as they could discriminate, to those who were actually starving. Nearly everywhere the live stock had disappeared and barns were torn down for fuel. In the winter hunger typhus broke out.

The Question of the Dardanelles.—In the convention of London in 1841 the right of Turkey to close the Dardanelles to the war-ships and

troop transports of all nations was laid down, and in the Treaty of Paris, in 1856, it was confirmed. In April, 1891, the steamer "Kostroma," belonging to the volunteer fleet of Odessa, on its way to Vladivostok with workmen and materials for the Trans-Siberian Railway, on representations being made that she was a naval vessel, was detained by the Turkish authorities. The Russian ambassador at Constantinople protested, and a preliminary agreement was arrived at, which was embodied in a formal convention, signed in July, providing that vessels of the volunteer fleet flying the commercial ensign should be permitted to pass through the Bosphorus as merchant vessels, and that Russia need notify the Porte only in the event of such vessels car-

rying soldiers or war material. On Aug. 4 the "Moskwa," returning with 700 men on board, who were represented to be Russian soldiers, was detained. M. de Nelidoff again protested and demanded an indemnity, and the vessel was allowed to proceed. Two weeks later the same thing happened in regard to the "Kostroma." After an interchange of explanations an arrangement was reached by which the vessels of the volunteer fleet should be allowed to pass through the Bosphorus when taking out military escorts accompanying convicts to Saghalien or troops for the garrisons in eastern Asia on the application of the Russian ambassador, and to bring back troops whose time has expired on the declaration of the commander of the vessel.

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SALVADOR, a republic in Central America. The Constitution vests the legislative power in a Congress consisting of the House of Representatives and the *Senaté*. The President, who possesses the executive power, is elected for four years by the direct vote of the nation. The President in office is Gen. Carlos Ezeta, who was proclaimed Provisional President by the army on June 22, 1890; elected by Congress on Sept. 11, 1890; and elected by the people for the full term, beginning March 1, 1891.

The area of the republic is estimated at 7,225 square miles. The population is twenty times as dense as in the rest of Central America, numbering 651,130, according to the census of 1886. San Salvador, the capital, had 16,327 inhabitants in 1888. The schools in 1888 had 21,101 pupils. The revenue in 1889 was \$4,070,342 in silver, and the expenditure was \$4,033,157.

Finances.—The revenue is raised chiefly by customs duties and monopolies. The chief items of expenditure were \$972,000 for the public debt, \$909,000 for the army, \$555,000 for public works, and \$336,000 for education. In 1890 the revenue amounted to \$4,153,000, of which \$2,612,000 were derived from customs, \$1,242,000 from the spirit monopoly, \$44,000 from stamps, \$24,000 from the powder and saltpeter monopolies, and \$231,000 from other sources. The total expenses for 1890 were \$5,442,000, of which \$2,758,000 were for the army, \$407,000 for the Interior Department, \$1,282,000 for the Ministry of Finance, \$153,000 for the Ministry of Justice, \$384,000 for public instruction, \$372,000 for public works, and \$91,000 for foreign relations. The internal debt in 1890 amounted to about \$750,000, and the foreign debt to \$1,500,000. The active troops number about 4,000, and the militia \$15,000.

Commerce and Communications.—The value of the imports in 1890 was \$2,401,000 against \$2,878,000 in 1889, \$4,076,000 in 1888, \$3,344,000 in 1887, and \$2,428,000 in 1886. The exports in 1890 were valued at a total sum of \$7,579,000, against \$5,489,000 in 1889; \$6,707,000 in 1888, \$5,243,000 in 1887, and \$4,755,000 in 1886. The chief articles of export in 1890 were the following: Coffee, \$4,269,000; indigo, \$1,053,000; sugar, \$290,000; tobacco, \$211,000; silver bars, \$204,000. There are 55 miles of rail-

road in operation. A contract to build a railroad through Salvador to Honduras was awarded to a French company by President Ezeta, and approved by Congress in June, 1891. A plan was accepted by the Government in October for a line between San Salvador and Santa Tekla, and a railroad from Santa Tekla and La Libertad was authorized at the same time, making an alternative route between the capital and the sea. During 1889 the three ports of the republic were visited by 355 steamers and 47 sailing ships. The length of the telegraph lines is 1,630 miles. The number of messages sent in 1889 was 495,689, including 182,278 official.

Political Events.—The election of Gen. Ezeta as President for the ensuing four years, and of his brother Antonio Ezeta, as Vice-President, was confirmed by the Congress, and they were inaugurated in the beginning of March, 1891. In the Cabinet appointed to mark the return to constitutional conditions, Antonio Ezeta retained the portfolio of the War Department, which he shortly afterward resigned in order to become general-in-chief of the army, Gen. Amaya succeeding him as Minister of War. The President and his supporters were compelled to be very watchful against a surprise, for their enemies in the country were numerous, and those who had fled to Honduras and Guatemala were busy planning a counter-revolution. The German Government recognized Ezeta, but simply as *de facto* head of the state. On May 6 Col. Molema and Gen. Bardales seized a part of the island of Amalpa and attempted to set up a rival government. Their plan was frustrated by Gen. Barrera, who, with Government troops, defeated the rebels before the re-enforcements that they expected could arrive, killing Gen. Bardales in the action. The treaty of peace with Guatemala was ratified by Congress in June. In an attempt to raise a new loan abroad President Ezeta had no success. On Sept. 9 and the succeeding days a large part of the country was shaken by a series of severe earthquakes, which destroyed buildings and caused forty deaths in the capital, and worked worse destruction in other towns, especially in Comasagua, where only eight houses were left standing.

As the year advanced, Gen. Ezeta had good reason to fear that the friends of the late Gov-

ernment would effect his overthrow. He was told that President Barillas of Guatemala had offered to Gen. Ayala and his friends arms, money, and men for a revolution in Salvador. The Salvadorian minister in Mexico appealed to the Mexi-

Guatemala, Gen. Alatorre, Mexican minister to Central America, threatened President Barillas with armed intervention if the hostilities between Guatemala and the existing Government of Salvador were renewed. President Ezeta



ILOPANGO VOLCANO, SAN SALVADOR.

can Minister of Foreign Affairs to interfere to prevent the revolution that Guatemala was suspected of fostering, and as the Mexican Government is opposed to the union of the Central American republics under the leadership of

showed how great were his fears by dismissing Gen. Amaya from the War Department and banishing Gen. Plazas and other persons. In September Dr. F. Galindo retired from the Ministry of Foreign Affairs, and was succeeded by Dr. Sal-

vador Gallegos. Dr. Geronimo Pou, former minister to Mexico, who was appointed by President Ezeta as his private secretary, also retired.

Detention of an American Steamer.—The Pacific Mail Steamship Company, whose steamers touch at all the ports between San Francisco and Panama, has been the chief means of developing the foreign trade of the Central American countries, from each of which it has received mail subsidies. The people of Salvador have often been dissatisfied with the charges and accommodations, and the men in power have been angry because they could extract no bribes from the company; yet, so long as there was no competition on the west coast, the officers of the company could defy their resentment. Recently three German lines running between Central America and Europe, and one running from the west coast to Mexico and China, have made the dictators of these republics more independent, and have given satisfaction to the planters by loading and sailing at their convenience, and by lowering freight rates to the extent of one or two cents on every pound of coffee. When the "City of Panama," one of the smaller vessels of the Pacific Mail Company, entered the port of La Union, President Ezeta, learning that she had on board Dr. Ayala, Gen. Letona, Gen. Rivas, and Dr. Luciane Hernandez, to whom President Barillas had offered asylum and who were on their way to Guatemala, demanded that they should be given up to the Salvadorian authorities. Capt. White, master of the vessel, refused to comply, and, as the captain of the port delayed giving him the permit to sail, he suspected that the Government was making preparations to seize his passengers, and therefore he sailed without clearance papers. When he put in at La Libertad he was informed that the vessel was declared confiscate, and was forbidden to pull up anchor till the matter was adjusted; otherwise the steamer would be seized by the Government on her arrival at Acajutla. In reply to the inquiries of the company's officials, the Minister of Commerce replied that Salvador was merely putting in force the doctrine laid down by the United States Government in the case of the "Itata." Capt. White was convinced that the Salvadorian President, who was at Acajutla with an armed force, intended to board the steamer and make prisoners of the political refugees. On instructions telegraphed by Mr. Dow, the company's agent at Panama, he ignored the notice of confiscation, weighed anchor on Aug. 10, and landed his passengers safely at San José. The United States minister began his inquiry into the matter after the ship was gone. The incident gave occasion for a protest from the Salvadorian Government, and a demand for the punishment of Capt. White, with which the United States Government refused to comply. After the Salvadorian exiles arrived in the city of Guatemala, attempts were made to assassinate them. Five suspected assassins were expelled from the country by the Guatemala authorities on Sept. 4, after one of the refugees had been shot at; and yet on the same day Dr. Ayala, who was Vice-President of Salvador when President Menendez was killed by the revolutionists, and was therefore the constitutional successor to the office usurped by Ezeta, was murdered in his

own house by a man who stole in and shot him in the back. In November Gen. Maximo Salguero, Dr. Salvador Duarte, and several other persons were arrested in Santa Ana, Salvador, being suspected of a plot to poison Gen. Antonio Ezeta, Vice-President and Minister of War, of Marine, and of the Interior, at the instigation of Dr. Hernandez and Gen. Lissandro Letona, who were still in Guatemala City, and were believed to be actively preparing for a revolution.

SALVATION ARMY. The general income and expenditure account of the Salvation Army for 1891 shows that the expenses of the International Headquarters amounted to £15,964. The sum of £3,639 was spent for divisional centers and corps expenses; £1,095 for "slum work"; and the expenditures on account of public demonstrations and special extension, appeals to the public, the legal department, the sick and wounded fund, and other items, brought the total outlay up to £35,234. The chief items of income were: From gifts and subscriptions, £10,513; quarterly collections from corps throughout the kingdom, £1,285; grants out of trade profits, £13,797; self-denial fund, £5,106; and gifts and subscriptions for sick and wounded fund, including sums from self-denial fund, £3,530. The Colonial and Foreign Service Fund shows a total expenditure of £34,902, of which £9,203 were spent in India, £2,496 in South Africa, £4,423 in Europe, and £444 in South America. The cost of the training-homes had been £5,900. The self-denial fund amounted to £30,281, an increase of £10,000 from the previous year. The profits from the sale of newspapers, periodicals, outfit, and books had amounted to £17,100, of which £13,797, as above, had been handed over to and expended by headquarters. Editions of the "War Cry," the weekly journal of the Army, were published in 35 countries, in 15 languages. The operation, called in the Army "taking prisoners," or the arousing of anxious inquirers, had resulted in the conversion of 100,000 persons at home and 131,000 abroad. The report expresses the opinion that, "considering the vast extent of our operations and the necessarily expensive character of all pioneer work, we are satisfied that the money received from our friends has been laid out to the best advantage."

The International Headquarters staff (including home office, trade department, and social wing) consisted of 1,110 officers. In the British Isles there were 3,587 corps; in France and Switzerland, 445; in Belgium, 41; in Holland, 186; in Germany, 68; in Denmark, 39; in Sweden, 505; in Norway, 231; in Canada and Newfoundland, 1,044; in the United States, 1,293; in the Argentine Republic, 57; in South Africa, 195; in India and Ceylon, 516; in Australia, 1,163; in New Zealand, 268; in Finland, 24; in Italy, 21. Total for 1891, 10,893 corps, showing an increase during the year of 1,015 corps. The weekly newspapers numbered 32, and the monthly magazines 4, all having a total annual circulation of 45,000,000 copies.

SANTO DOMINGO, a republic occupying about two thirds of the island of Hayti. The President is chosen for four years. The Legislature is composed of 22 members, elected by indirect popular suffrage for four years. Gen. Ulisses

Heureaux was elected President in 1886. The Cabinet was made up in 1891 as follows: Minister of the Interior and of Police, Gen. W. Figueroa; Minister of Foreign Affairs, Gen. J. Gonzalez; Minister of War and Marine, Gen. F. Lithgoro; Minister of Finance and Commerce, Gen. J. F. Sanchez; Minister of Public Works, Gen. A. Wos y Gil.

Area and Population.—The area of the republic is 18,045 square miles. The population in 1888 was 416,871. Santo Domingo, the capital city, has 25,000 inhabitants, and Puerto Plata, the principal seaport, has 15,000. The people are negroes and mulattoes, with some admixture of Indian blood, and a larger sprinkling of whites, descended from Spanish settlers, than is found in the neighboring republic of Hayti. Roman Catholicism is the state religion. There are about 300 schools, with 10,000 pupils.

Finances.—The revenue is obtained mainly from customs duties. In 1889 the budget estimate of revenue was \$1,531,284, and of expenditure \$1,408,543. The debt on Jan. 1, 1889, consisted of an internal debt of \$1,282,592, another internal debt, known as the public debt, amounting to \$1,648,423, a foreign debt of \$234,250, and the debt contracted in London in 1869 which the Council of Foreign Bondholders in 1889 computed at £714,300, with unpaid interest amounting to £664,299. In order to effect a settlement with the old creditors and obtain the sum of £475,000 for public improvements, a new loan of £770,000 has been contracted.

Commerce.—The chief products are tobacco, coffee, cacao, cotton, and sugar. The cultivation of the sugar-cane is extending. To encourage agriculture and immigration the Government offers grants of public lands. The principal exports are logwood, lignum-vitæ, mahogany, coffee, fustic, tobacco, sugar, and cacao. The trade is chiefly with the United States, the Danish West Indies, Spain, England, France, and Germany. The value of the imports in 1887 was \$2,056,928, and that of the exports \$2,660,471. There were 175,637 hundred-weight of tobacco and 9,391 hundred-weight of cacao exported. The export of sugar increased from 114,604 hundred-weight in 1881 to 406,142 hundred-weight in 1887, and that of molasses from 190,802 to 476,933 hundred-weight. In 1888 the total value of imports was \$1,992,884, and that of exports \$2,520,983. According to the United States customs reports, the imports from Santo Domingo into the United States in 1890 were \$1,951,013, the chief articles being sugar for \$1,715,364, hides and skins for \$77,279, dyewoods for \$71,031, and coffee for \$49,443. The domestic exports from the United States to Santo Domingo were valued at \$926,651, the principal items being iron and steel goods, wheat flour, wood manufactures, cotton goods, and lard. The number of ships entered in 1890 was 181, of 97,250 tons.

Communications.—A railroad to unite Sanchez, Samana Bay, and La Vega has been completed for a distance of 72 miles. One has been begun between Puerto Plata and Santiago, and another between Barahona and Cerro de Sal. The post-office in 1889 forwarded 204,546 letters, circulars, etc., in the domestic service, and 182,778 in the international service. There are 369

kilometres in operation, placing Sanchez in communication with La Vega and Puerto Plata with Santo Domingo, and connecting with the French and the South American cables.

Dispute with Hayti.—In 1874, in view of the efforts recently made by the United States Government to acquire Samana Bay as a naval station, the Haytian President induced the Dominican Government to enter into a treaty whereby it pledged itself not to sell, cede, or lease any part of its territory to a foreign power. This agreement was embodied in a treaty of commerce, in which the customs frontier between the two republics was abolished, and each engaged not to levy duties on the products of the other, while an arrangement was made for the equitable division of the maritime customs by which the Haytian Government was to pay over a considerable sum annually to Santo Domingo. For a year or two the payments were made, and then they ceased. An old boundary dispute was revived, and other matters came up to cause friction between the two black republics, whose relations have been in varying degrees strained ever since. The mutual irritation was increased in 1890 when President Hippolyte denounced the treaty of 1874, although it was concluded for twenty-five years, and imposed heavy, almost prohibitive, duties on all Dominican products. A claim of \$823,477, presented by Santo Domingo as the balance due from Hayti which accrued during the first eight years in which the treaty was in force, has been disregarded. A commission was appointed to seek an adjustment of this and other differences; but it broke up without accomplishing its object.

SCHWENKFELDERS. The one hundred and fifty-seventh anniversary of the landing of the first colony of Schwenkfelders in the United States was celebrated at Clayton, Pa., Sept. 24. There are said to be only five organized congregations of this denomination in the United States, all in Pennsylvania, while there are individual members in several other States; but the sect is regarded as declining. The Schwenkfelders originated with Caspar Schwenkfeld, of Silesia, who, in the sixteenth century, educated a Catholic, became a Protestant through reading the works of Tauler and Luther, and took an active part in propagating the doctrines of the Reformation. He afterward advocated doctrines differing from those of Luther on the Eucharist and other subjects, and was persecuted by both Protestants and Catholics. He died at Ulm in 1561, in the seventy-second year of his age. About two thousand members of the Church attended the anniversary at Clayton. The exercises included memorial addresses and a repast, served at noon, according to a traditional custom, in the meeting-house.

SERVIA, a monarchy in southeastern Europe. By the Constitution of Jan. 3, 1889, the executive power is vested in the King, and is exercised in his name by a Council of Ministers, who are individually and collectively responsible to the National Assembly or Skupshtina. Projects of law are first submitted to a Council of State, consisting of 8 members chosen by the vote of the Skupshtina and an equal number nominated by the King. The members of the Skupshtina are elected for three years by the direct suffrage of

all Servians over twenty-one years of age who pay 15 dinars in direct taxes. The reigning King is Alexander I, born Aug. 24, 1876, son of King Milan Obrenovich IV, who abdicated on March 6, 1889, and of Queen Natalie, born in 1859, daughter of Col. Kechko, of the Russian Imperial Guard, from whom King Milan obtained a decree of divorce on Oct. 24, 1888, on the ground of incompatibility, from Archbishop Theodosius, which his successor, Archbishop Michael, declared to be contrary to the Church canons, although afterward he refused to have the divorce formally set aside by the Synod as null and void. During the minority of the King the Government is carried on by a regency consisting of Jovan Ristich, Gen. J. Beli-Marcovich, and Gen. K. S. Protich. The ministry in the beginning of 1891 was composed of the following members: President of the Council and Minister of Foreign Affairs, Gen. Sava Gruich; Minister of Finance, Dr. M. Vuich; Minister of Agriculture and Commerce, K. Tauschanovich; Minister of the Interior, J. Djaja; Minister of War *ad interim*, Gen. Gruich; Minister of Public Instruction and Worship, A. Nikolich; Minister of Justice, M. Djordjevich; Minister of Public Works, M. Jossimovich.

Area and Population.—The area of the kingdom is 48,589 square kilometres, or 18,755 square miles. The population in 1891 was estimated at 2,162,759, composed of 1,110,731 males and 1,052,028 females. The mass of the people are of the Servian race and adhere to the Greek Orthodox Church. The number of marriages in 1890 was 21,555; of births, 87,018; of deaths, 54,723; excess of births, 32,295. Belgrade, the capital, had 54,458 inhabitants in 1890.

Finances.—The budget for 1891 makes the total receipts of the Government 56,527,084 dinars or francs, of which 21,214,247 dinars are raised by direct taxation; 3,600,000 dinars are the receipts from customs; 2,077,500 dinars are obtained from the tobacco, spirit, and salt taxes; 2,250,000 dinars are judicial fees; 10,110,000 dinars are the yield of the state monopolies; 3,670,000 dinars are the earnings of domains, posts, telegraphs, etc.; 5,000,000 dinars are derived from the state railroad; 931,954 dinars are the profits of the state mortgage bank; and 7,673,383 dinars come from various other sources. The total expenditures were estimated at 59,525,894 dinars, of which 19,900,880 dinars represent the expenses of the debt, 1,200,000 dinars the civil list, 1,998,806 dinars pensions and dotations, 3,652,384 dinars the expenditure of the Ministry of Education, 4,947,755 dinars those of the Ministry of Finance, 2,642,037 dinars those of the Ministry of the Interior, 1,183,313 dinars those of the Ministry of Foreign Affairs, 9,739,113 dinars those of the Ministry of War, 4,202,541 dinars those of the Ministry of Public Works, 3,604,527 dinars those of the Ministry of Agriculture and Commerce, 1,181,593 dinars those of the Ministry of Justice, 313,155 dinars the cost of the Legislature and State Council, 373,226 dinars general expenses of Government, and 3,823,564 dinars miscellaneous expenditures.

The debt on Jan. 1, 1891, amounted to the capital sum of 380,510,734 dinars, viz., railroad loans amounting to 152,353,000 dinars, a Russian debt of 3,704,734 dinars, a loan of 6,732,500 dinars raised to indemnify emigrating land-owners, a

lottery loan of 32,135,000 dinars, a loan of 39,774,000 dinars raised in June, 1884, one of 38,906,500 dinars raised in October, 1885, and subsequent loans of 6,000,000 dinars for which the salt revenue is pledged, 9,928,000 dinars borrowed on the security of the tobacco monopoly, and 40,977,000 dinars on the other monopolies.

The Army.—The Radical party, when it was placed in power by the votes of the rural population in 1889, promised to abolish the standing army and establish a militia system. No steps have been taken to carry out this pledge. The law of Jan. 31, 1889, makes service obligatory. It begins at the age of twenty-one and lasts one year in the active army, nine years in the reserve, and ten years in each of the two bans of the national militia. In case of mobilization the active army and its reserve are expected to furnish 5 divisions, each comprising 3 regiments of 4 battalions of infantry, 1 battalion of foot guards, 1 regiment of artillery divided into 2 sections of 4 batteries each, and 1 company of engineers, besides the commissary, train, ambulance and hospital services, etc. Outside of the division formations there are 3 regiments of cavalry, 1 battery of mounted artillery, 9 mountain batteries, engineers, sappers, railroad and telegraph troops, siege and fortress artillery, etc. The first ban of the militia ought to furnish in time of war 15 regiments of infantry, 5 regiments of artillery, 5 sections of cavalry, and its complement of auxiliary troops, and the second ban should consist of about 60 battalions of infantry. The approximate strength of the active army and its reserve is estimated at 70,000 infantry, 3,500 cavalry, 7,000 artillery, and 3,500 engineers, etc., making 84,000 men, without counting train and non-combatants. The strength of the militia, exclusive of auxiliary services, is 70,000 infantry, 1,000 cavalry, 2,000 artillery, and 500 engineers, or in all 73,500 fighting men.

Commerce.—The farmers of Servia own the land they cultivate. More than half the area of the kingdom is under grain or vines. Large quantities of prunes are grown, the product in 1888 having amounted to 25,000 tons and the export to 16,942 tons. Pigs are raised in great number for export and fattened on acorns, which are very abundant. The imports in 1890 were valued at 38,045,000 dinars, of which 22,820,000 dinars came from Austria-Hungary, 4,888,000 dinars from Great Britain, 2,868,000 dinars from Germany, 1,622,000 dinars from America, and the rest from Bulgaria, Turkey, Russia, Roumania, Switzerland, and other countries. The total value of the exports was 45,841,000 dinars, of which 39,398,000 dinars went to Austria-Hungary, 3,138,000 dinars to Turkey, and the next largest amount, viz., 811,000 dinars, to Germany. Of the imports, 4,119,000 dinars consisted of colonial goods, 7,649,000 dinars of cotton manufactures, 2,715,000 dinars of woolens, and 3,448,000 dinars of metals. In the total value of exports 18,000,000 dinars represent the exports of field and orchard produce, and an equal sum those of live animals and animal products.

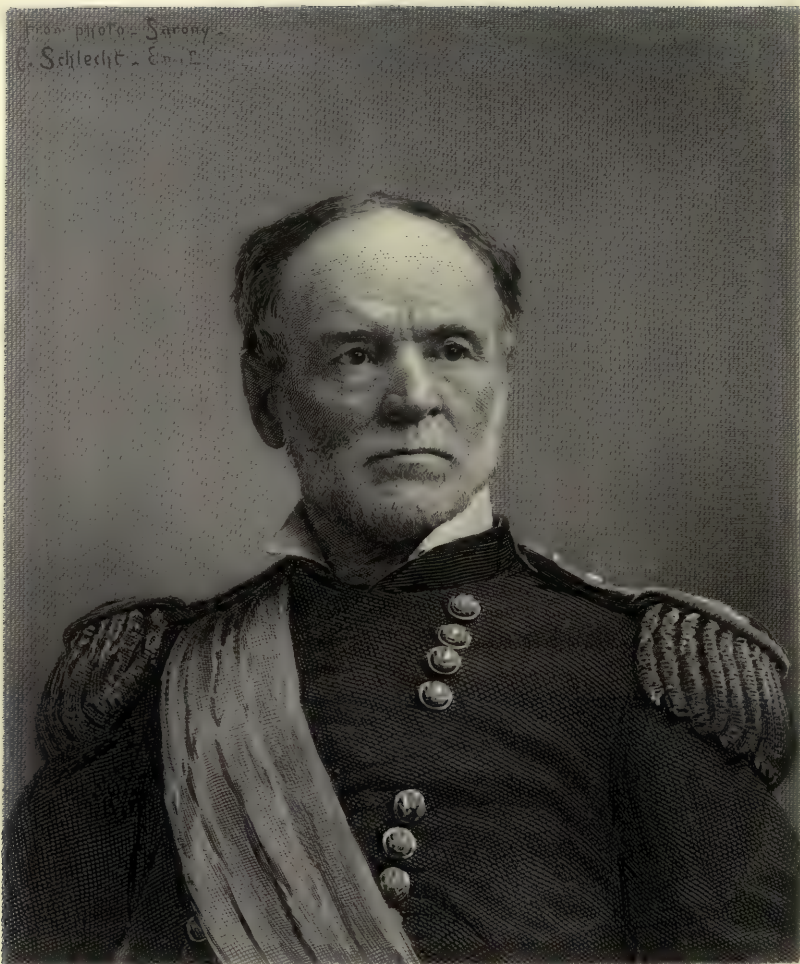
Communications.—The principal railroad, running from Belgrade to Vranja, has a length of 367 kilometres, and the three branches make the total length 540 kilometres. The telegraph lines in 1889 had a length of 2,912 kilometres,

with 4,930 kilometres of wires. The dispatches sent during the year numbered 496,088, of which 340,062 were paid internal and 139,973 international, 13,673 were transit dispatches, and 2,380 were connected with the service. In 1889 the post-office forwarded 4,021,000 domestic and 2,935,000 international letters.

Expulsion of Queen Natalie.—In January, 1891, M. Ristich renewed the offer made in the name of the regency and the Cabinet in July, 1889, by Col. Gruich, which was that the Queen should reside abroad, but that she should pay two or three visits annually to her son as his guest in the palace, and when in Belgrade should be treated with royal honors. This compromise, though it virtually recognized the invalidity of her divorce, was not satisfactory to her, and was still less acceptable to King Milan; who entered a strong protest. M. Ristich, in a letter replying to Natalie's complaints, accused her of unscrupulous ambition and of conduct toward her husband such as a daughter of M. Kechko ought not to have followed toward an Obrenovich who had raised her to the Servian throne. An agitation against the Queen was started among the Radicals, who represented her as striving to usurp the Government. She returned M. Ristich's letter, and wrote that her self-respect would not allow her to hold any further relations with the regency or the Government. In the course of the controversy King Milan, who was alleged to have accepted 100,000 francs as the price of his leaving Belgrade, accused Milutin Garashanin of having had Helena Markovich, who shot at the King on Oct. 23, 1892, and her accomplice, Helena Knicanin, both secretly murdered in prison to conceal his own connection with their crime. Garashanin, who continued to be Milan's Prime Minister for five years after the mysterious death of the two women, confirmed the statement that they were assassinated, but sought to fasten the guilt upon the ex-King. The mutual calumniations interchanged by the chief actors of the last reign led the Skupshtina to amend the press laws by making attacks on King Milan or any member of the royal family, or upon the Regents, punishable with imprisonment, adding an amendment making criticisms of acts of the Legislature equally punishable. On March 22 the chief regent and the Prime Minister submitted to King Milan a draft agreement providing that both he and Queen Natalie should reside abroad till King Alexander's majority, and should each receive a month's visit annually from their son, whom, in case he should fall dangerously ill, the King should be permitted to visit in Belgrade; that King Milan should be paid an allowance of 30,000 francs a month; and that the question of the legality of the divorce should be adjudicated by the Consistory of the Servian Synod. An arrangement was arrived at with Milan, who, on the receipt of 1,000,000 francs in cash and the promise of a pension of 300,000 francs a year, left Servia in the middle of April and agreed to remain away till Aug. 1, 1894, when the young King attains his majority, making it a condition that the Queen should also be kept out of the country. At the last sitting of the Skupshtina a resolution was passed after a stormy debate expressing the hope that the Government would

use measures to induce Queen Natalie to leave the country. Her friends of the Progressist party, including M. Garashanin and Gen. Horvatovich, advised her to yield only to force. On May 8 M. Pachich gave her official notice of the resolution of the Skupshtina. She expressed her determination to stand on her constitutional right to remain, not for the purpose of meddling in politics, but to prove to her son that she had not left him of her own free will. On May 18 the Government made an attempt to expel her by force. A company of gendarmes surrounded her house, and the prefect of police carried her off in a carriage; but on the way to the wharf where the royal yacht was waiting to take her on board, university students stopped the carriage, detached the horses, and dragged it back in triumph to the Queen's residence. Respectable citizens and students who volunteered to defend the house were fired on by soldiers, who killed two and wounded several. The whole garrison was called out, and the streets were the scene of severe fighting, in which many casualties occurred among both citizens and soldiers. The fighting ceased, and the Queen's defenders dispersed only after a promise had been given that the decree of expulsion would be withdrawn. The way having been cleared by this falsehood, at daybreak the Queen was conveyed by force to a railroad train and escorted to Semlin, in Hungary, after protesting against the illegality of the proceeding; for the Constitution and laws of Servia provide no power of banishment, even by judicial decree and for criminal offenses, and recently the Skupshtina had refused to pass a bill to supply the omission. The object of the Radical party and the Government in expelling Queen Natalie was not so much to prevent her from making trouble by her political activity, for her immediate followers were few and powerless, but to insure the absence of King Milan. All the Opposition newspapers were confiscated, a great number of the Queen's friends were arrested, and the garrison at Belgrade was strengthened as a precaution against an uprising of citizens. Col. Miletich, the Minister of War, disapproving the intended action of the Cabinet, offered his resignation on May 15, which was not accepted by the regents at first, but when he declined to make the desired military dispositions he was replaced provisionally by Col. Jankovich, chief of the General Staff. On May 19 Col. Z. D. Praporchetovich was appointed Minister of War.

The expulsion of the Queen was condemned by a part of the Radical party as a violation of the Constitution, and a larger number blamed the ministers for the brutal and unskillful manner in which her removal was effected. On May 24, M. Djaja, the Minister of the Interior, offered his resignation, which he was induced a day or two afterward to withdraw. The prefect of police and commander of the gendarmerie were superseded. Much as the ministry and the regency were discredited, the Queen-mother was in a worse position than ever. If she had accepted the proposal made to her at Wiesbaden in June, 1888, her son would have been permitted to reside with her for nine months in the year. After the divorce proceedings were instituted she intimated her willingness to accept these terms,



W. T. Sherman

but it was too late. The proposition that she might come to Serbia twice a year and be received with royal honors she also seemed disposed to accept after first refusing. After coming to Serbia in 1889 she took a course that was fatal to her own objects and dangerous to the dynasty, by addressing a memorandum to the Skupshtina attacking the regency, the Government, and the metropolitan, thus attempting to make political capital for the Progressist Opposition, and deliberately placing herself at the head of a political faction. Her action brought King Milan to Serbia, and the regents and ministers saw no way to avoid civil disturbances except by getting them both out of the country; for if Milan should feel impelled to reassume the royal power, he would receive the support of a large part of the army, and by his political dexterity could enlist in his cause a party of considerable strength, and could draw to his support a part of the Radical party, which fought strenuously for years against his absolute rule that the Progressists, now his bitterest enemies, upheld, and organized rebellions against him when he was king. M. Ristich and the Archbishop Michael, once the Queen's staunchest friends, were now her implacable foes; and the Liberal party, though it had turned against the first regent, whose guidance it formerly followed obediently, withheld the support that the Queen expected. The violent demonstrations in Belgrade originated not so much in partisanship for her as in hostility to the Government, which had made itself thoroughly unpopular by imposing the *octroi* duties. The Queen vainly sought to obtain the interposition of the Russian Government, and after the departure of the royal pair affairs in Serbia quieted down. In August the young King went to Russia to pay a visit to the Czar, accompanied by M. Ristich and M. Pachich. On his return he visited the Austrian Emperor at Ischl, and then went to Paris to pass some weeks with his father.

Change of Cabinet.—Dissensions in the Radical Club led to the resignation of M. Gruich on Feb. 20, 1891, and the formation of a Cabinet by M. Pachich, the president of the Skupshtina and leader of the moderate faction of the Radical party. Most of the ministers retained their portfolios, and the Cabinet was constituted on Feb. 23 as follows: Minister-President, without portfolio, N. Pachich; Minister of Public Works, P. Velimirovich; Minister of Finance, Dr. M. Vuich; Minister of Justice, G. Gershich; Minister of Agriculture and Commerce, K. Taushanovich; Minister of Foreign Affairs, M. Djordjevich; Minister of the Interior, J. Djaja; Minister of Public Worship, A. Nikolich; Minister of War, Col. Miletich. The ultimate aims of the section of the party which asserted its influence in the overthrow of M. Gruich embraced the abolition of the standing army, the reduction of expenditures by 20,000,000 francs, the adoption of a bold Great Servian foreign policy, and the restoration of the Karageorgevich dynasty. The most important measure of the Skupshtina, which ended its sittings in the middle of April, was a bill to impose *octroi* duties in order to raise on the security of the new tax a loan of 10,000,000 dinars or francs for paving, draining, and lighting Belgrade. The Austrian Government had negotiated with for a year and a half, but had

refused to assent to the measure, and when the bill was passed, although the duties were only half as much as had been contemplated, it announced that if they were collected on Austrian goods the existing commercial treaty would be regarded as null and void. The German and British governments joined in the protest. Nevertheless the Servian Government promulgated the bill, giving out that it was constrained to levy the new duties to meet the interest on the public debt, most of which was held abroad. The Government had to meet a deficit of 12,000,000 dinars, and among the measures adopted in the emergency was one reducing by 8 per cent. the salaries of all state officials, which were already very low. In addition to the Cabinet difficulties that occurred during the progress of the affair of Queen Natalie, the Minister of Worship and Instruction engaged in a conflict with the metropolitan, who refused to confirm the appointment of an active Radical politician as vicar of Belgrade. In August the Finance Minister, Dr. Vuich, could not obtain the consent of his colleagues to the summary collection of arrears of taxes, amounting to 19,000,000 dinars, and as without these he saw no way of averting a deficit, he resigned on the return, in September, of the Prime Minister, who himself took charge of the department *ad interim*.

SHERMAN, WILLIAM TECUMSEH, an American soldier, born in Lancaster, Ohio, Feb. 8, 1820; died in New York city, Feb. 14, 1891. He was a descendant of the Rev. John Sherman, of Essex, England, who emigrated to America in 1634 and settled in Woodbury, Conn. A brother of the Rev. John Sherman, who emigrated at the same time, was an ancestor of Roger Sherman. Some of the family removed to Lancaster, Ohio, early in this century, and Gen. Sherman's father was a justice of the Supreme Court of that State from 1824 till his death in 1829. The General's mother was Mary Hoyt, and he was the sixth of eleven children. After his father's death he was adopted by the Hon. Thomas Ewing, United States Senator, who a few years later appointed him a cadet in the Military Academy at West Point. There he was graduated in 1840, standing No. 6 in a class of 42. Among his classmates were Gens. George H. Thomas and George W. Getty, of the National, and Gens. Richard S. Ewell, Bushrod Johnson, and Thomas Jordan, of the Confederate service. He was commissioned second lieutenant in the Third Artillery, July 1, 1840, and ordered to Florida, where the Seminoles were still hostile. He became first lieutenant Nov. 30, 1841, and in 1843 was ordered to Fort Morgan, Ala. In 1843-46 he was at Fort Moultrie, Charleston harbor, and at Bellefontaine, Ala., and in 1846 was on recruiting service at Pittsburg, Pa.

On the breaking out of the war with Mexico he was assigned to Company F, Third Artillery, as junior first lieutenant, when the company was ordered to California. They sailed from New York, July 14, 1846, in the United States store-ship "Lexington," commanded by Theodorius Bailey, afterward famous as one of Farragut's ablest lieutenants. Among the officers with Sherman were Lieuts. E. O. C. Ord and Henry W. Halleck, afterward generals. They made the passage round Cape Horn, calling at Rio de

Janeiro and Valparaiso, and anchored in the Bay of Monterey, California, Jan. 26, 1847. In California Sherman was adjutant-general to Gen. Stephen W. Kearny, Col. R. B. Mason, and Gen. Persifer F. Smith, successively. He had many adventures of the kind incident to a new and unsettled country. In July, 1847, Yerba Buena (now San Francisco) had been laid out in lots, which were offered for sale at \$16 apiece. Sherman says: "Many naval officers had invested, and Capt. Folsom advised me to buy some; but I felt actually insulted that he should think me such a fool as to pay money for property in such a horrid place as Yerba Buena, especially ridiculing his quarter of the city, then called Happy Valley." Another incident was much more significant. Sherman tells it in his "Memoirs":

I remember one day, in the spring of 1848, that two men, Americans, came into the office and inquired for the Governor. I asked their business, and one answered that they had just come down from Capt. Suter on special business, and they wanted to see Gov. Mason *in person*. I took them in to the colonel, and left them together. After some time the colonel came to his door and called to me. I went in, and my attention was directed to a series of papers unfolded on his table, in which lay about half an ounce of *placer-gold*. Mason said to me, "What is that?" I touched it and examined one or two of the larger pieces, and asked, "Is it gold?" Mason asked me if I had ever seen native gold. I answered that in 1844 I was in upper Georgia, and there saw some native gold, but it was much finer than this, and that it was in vials, or in transparent quills; but I said that, if this were gold, it could easily be tested, first by its malleability, and next by acids. I took a piece in my teeth, and the metallic luster was perfect. I then called to the clerk, Baden, to bring an axe and hatchet from the back yard. When these were brought, I took the largest piece and beat it out flat, and beyond doubt it was metal, and a pure metal. Still, we attached little importance to the fact, for gold was known to exist at San Fernando, at the south, and yet was not considered of much value.

Sherman twice visited the newly discovered gold mines on the Sacramento and became partner in a store, from which he made a profit of \$1,500, without which he says he could not have lived, as his official salary remained fixed, while the gold excitement enormously increased the price of everything. He also surveyed one of the many new cities that were laid out on the shores of San Francisco Bay, engaged in other surveys, and made some profitable investments in land.

In January, 1850, Sherman returned from California as a bearer of dispatches to the War Department, and on May 1 he married, in Washington, Ellen Ewing, daughter of Hon. Thomas Ewing, then Secretary of the Interior. In September he was commissioned captain and ordered to St. Louis. Two years later he was ordered to New Orleans. But he had hardly assumed his duties there when he was offered a partnership in a branch banking house which a St. Louis firm proposed to establish in San Francisco. In February, 1853, having obtained six months' leave of absence, he took passage for California by the Nicaragua route. The passage from the Isthmus was made in the steamer "S. S. Lewis," which got out of her course in a fog and was wrecked near shore 18 miles north of San Francisco, April 9. Capt. Sherman made

his way to the city and had a relief vessel sent to the shipwrecked crew and passengers. When he had examined into the proposed business, he returned home in the summer, resigned his commission in the army, and on Sept. 20 sailed from New York with his family, reaching San Francisco on Oct. 15. In the spring of 1856 Sherman was commissioned major-general of militia, and a little later occurred the Vigilance Committee troubles. Gen. Sherman enrolled men in the militia and proposed to suppress the Vigilantes; but when Gen. Wool, commanding United States forces in that department, refused to furnish arms, Sherman at once resigned his commission. With the decline of prosperity in San Francisco his firm closed up their business, and on May 1, 1857, he sailed for New York, where, on July 21, with the same partners, he began a banking business. But in the financial crisis of the following autumn they again closed up their business, paying all liabilities, and dissolved the partnership. After another trip to California to make final settlements and dispose of the firm's real estate, Gen. Sherman, in the autumn of 1858, entered into a law partnership with Hugh Ewing and Thomas Ewing, Jr., in Leavenworth, Kansas. In January, 1859, Daniel McCook (afterward General, killed in the Atlanta campaign) was taken in as a partner. They did a fair business, but it was hardly enough to support them as they wished, and Sherman spent a part of his time in opening a large farm for his father-in-law, and meanwhile wrote to Major (afterward General) Don Carlos Buell, in the War Department, inquiring if there was not a vacant paymastership. Buell informed him that a military college was about to be organized in Louisiana, and advised him to apply for the superintendency. Sherman took the advice, and in July, 1859, was appointed. The institution was established at Alexandria, and on Jan. 1, 1860, Gen. Sherman opened it with a faculty of five professors (he being Superintendent and Professor of Engineering) and 60 cadets. Of the condition of political affairs, as affecting him, in the autumn of that year, Sherman says:

Political excitement was at its very height, and it was constantly asserted that Mr. Lincoln's election would imperil the Union. I purposely kept aloof from politics, would take no part, and remember that on the day of the election in November I was notified that it would be advisable for me to vote for Bell and Everett; but I openly said I would not, and I did not. The election of Mr. Lincoln fell upon us all like a clap of thunder. People saw and felt that the South had threatened so long that, if she quietly submitted, the question of slavery in the Territories was at an end forever. I mingled freely with the members of the Board of Supervisors, and with the people of Rapides Parish generally, keeping aloof from all cliques and parties, and I certainly hoped that the threatened storm would blow over, as had so often occurred before after similar threats. At our seminary the order of exercises went along with the regularity of the seasons. Once a week I had the older cadets to practice reading, reciting, and elocution, and noticed that their selections were from Calhoun, Yancey, and other Southern speakers, all treating of the defense of their slaves and their home institutions as the very highest duty of the patriot. Among boys this was to be expected; and among the members of our board, though most of them declaimed against politicians generally, and especially abolitionists, as pests, yet there was a growing feeling that danger was

in the wind. I recall the visit of a young gentleman who had been sent from Jackson by the Governor of Mississippi to confer with Governor Moore, then on his plantation at Bayou Robert, and who had come over to see our college. He spoke to me openly of secession as a fixed fact, and that its details were only left open for discussion. I also recall the visit of some man who was said to be a high officer in the order of "Knights of the Golden Circle," of the existence of which order I was even ignorant until explained to me by Major Smith and Dr. Clark. But in November, 1860, no man ever approached me offensively to ascertain my views or my proposed course of action in case of secession, and no man in or out of authority ever tried to induce me to take part in steps designed to lead toward disunion. I think my general opinions were well known and understood, viz., that "secession was treason, was war"; and that in no event could the North and West permit the Mississippi river to pass out of their control.

On Jan. 18, 1861, Sherman wrote a letter to Gov. Moore, of Louisiana, in which he said:

As I occupy a quasi-military position under the laws of the State, I deem it proper to acquaint you that I accepted such position when Louisiana was a State in the Union, and when the motto of this seminary was inserted in marble over the main door: "By the liberality of the General Government of the United States. The Union—*est perpetua*." Recent events foreshadow a great change, and it becomes all men to choose. If Louisiana withdraw from the Federal Union, I prefer to maintain my allegiance to the Constitution as long as a fragment of it survives, and my longer stay here would be wrong in every sense of the word. In that event, I beg you will send or appoint some authorized agent to take charge of the arms and munitions of war belonging to the State, or advise me what disposition to make of them. And furthermore, as President of the Board of Supervisors, I beg you to take immediate steps to relieve me as superintendent the moment the State determines to secede, for on no earthly account will I do any act or think any thought hostile to or in defiance of the old Government of the United States.

In February he severed his connections with the institution, and on parting with him its Board of Supervisors adopted this resolution:

Resolved, That the thanks of the Board of Supervisors are due, and are hereby tendered, to Col. William T. Sherman for the able and efficient manner in which he has conducted the affairs of the seminary during the time the institution has been under his control—a period attended with unusual difficulties, requiring on the part of the superintendent to successfully overcome them a high order of administrative talent. And the board further bear willing testimony to the valuable services that Col. Sherman has rendered them in their efforts to establish an institution of learning in accordance with the beneficent design of the State and Federal governments; evincing at all times a readiness to adapt himself to the ever-varying requirements of an institution of learning in its infancy, struggling to attain a position of honor and usefulness.

About the 1st of March Sherman returned to Ohio. At the same time he was offered the superintendency of the Fifth Street Railroad, in St. Louis, and on April 1 he assumed the duties of the office. On May 14 he was appointed colonel of the Thirtieth United States Infantry, whereupon he resigned his place in St. Louis and reported at the War Department in Washington. He says in his "Memoirs":

The appearance of the troops about Washington was good, but it was manifest they were far from being soldiers. Their uniforms were as various as the

States and cities from which they came; their arms were also of every pattern and caliber; and they were so loaded down with overcoats, haversacks, knapsacks, tents, and baggage, that it took from 25 to 30 wagons to move the camp of a regiment from one place to another, and some of the camps had bakeries and cooking establishments that would have done credit to Delmonico.

The temper of Congress and the people would not permit the slow and methodical preparation desired by Gen. Scott; and the cry of "On to Richmond!" which was shared by the volunteers, most of whom had only engaged for ninety days, forced Gen. Scott to hasten his preparations, and to order a general advance about the middle of July. McDowell was to move from the defenses of Washington, and Patterson from Martinsburg.

Sherman was assigned to the command of the Third Brigade in the First Division (Tyler's) of McDowell's army. His brigade was made up of the Thirteenth, Sixty-ninth, and Seventy-ninth New York and the Second Wisconsin Regiments, and Ayres's battery was attached to it. The march to Manassas, he says, "demonstrated little save the general laxity of discipline, for with all my personal efforts I could not prevent the men from straggling for water, blackberries, or anything on the way they fancied."

At Blackburn's Ford, on July 18, the advance of Sherman's brigade developed the presence of the enemy on the other side of Bull Run. In the action of the 21st—known as the battle of Bull Run, or Manassas—Sherman led his brigade with skill, suffering a loss of 600 in killed, wounded, and missing. He appears to think that the famous panic originated among his men, for in his official report he says: "Here," (on a ridge where one of his regiments was engaged), "about half-past 3 P. M., began the scene of confusion and disorder that characterized the remainder of the day." After the retreat he set himself to the task of restoring discipline to his command, and preparing the defensive works for the Confederate attack that was daily expected. Shortly afterward he was commissioned brigadier-general of volunteers.

On Aug. 24 he was assigned to the Department of the Cumberland, the command of which was given to Gen. Robert Anderson, with whom Sherman had served nearly twenty years before at Fort Moultrie. His anxiety was that a proper force should be sent into Kentucky. All the troops that were being organized and equipped so rapidly were sent either to McClellan at the East or to Frémont in Missouri, and he was sent on a fruitless errand to Indianapolis and St. Louis to get forces to meet the expected invasion of Kentucky. On Oct. 8 Gen. Anderson, from failing health, relinquished his command of the department, and Sherman succeeded to it. In an interview with the Secretary of War, who was passing through Louisville, Gen. Sherman urged the importance of the line in Kentucky, and argued that, for a proper defense of it, he should have 60,000 men at once, and that for offensive operations 200,000 would be needed before the end. This was laughed at, and by some he was supposed to be slightly insane.

In November he was relieved by Gen. Powell and transferred to the Department of the Missouri, then commanded by Gen. Halleck. During the winter Sherman commanded a camp of

instruction near St. Louis, and on Feb. 13 he was ordered to assume command of the post at Paducah. Here, from new troops arriving, he organized a division for himself, and on March 10 embarked it on transports and moved up the Tennessee. With this division, on April 6 and 7, he participated in the bloody battle of Shiloh, or Pittsburg Landing, holding the right of the line, near Shiloh church. His command included 12 regiments and 4 batteries, and his total loss in killed, wounded, and missing was 2,034. He lost 7 guns on the 6th, and captured 7 on the 7th. Soon after this action he was promoted to major-general of volunteers. In the advance on Corinth in May, Sherman commanded on the extreme right. When the enemy abandoned Corinth, Halleck's army was broken up, and Sherman's division was employed in repairing the railroads. In July Halleck was called to Washington as military adviser to the President, and thenceforth Sherman was under the immediate command of Grant. His headquarters were now at Memphis.

A letter written by Sherman at this time to his brother is interesting as showing how the state of affairs appeared to him. The following is an extract:

For six weeks I was marching along the road from Corinth to Memphis, mending roads, building bridges, and all sorts of work. At last I got here, and found the city contributing gold, arms, powder, salt, and everything the enemy wanted. It was a smart trick on their part thus to give up Memphis, that the desire of gain to our Northern merchants should supply them with the things needed in war. I stopped this at once, and declared gold, silver, treasury notes, and salt as much contraband of war as powder. I have one man under sentence of death for smuggling arms across the lines, and hope Mr. Lincoln will approve it. But the mercenary spirit of our people is too much, and my orders are reversed, and I am ordered to encourage the trade in cotton, and all orders prohibiting gold and silver to be paid for it are annulled by orders from Washington. Grant promptly ratified my order, and all military men here saw at once that gold spent for cotton went to the purchase of arms and munitions of war. But what are the lives of our soldiers to the profits of the merchants? After a whole year of bungling the country has at last discovered that we want more men. All knew it last fall as now, but it was not popular. Now, 1,300,000 men are required when 700,000 were deemed absurd before. We should be in Jackson, Meriden, and Vicksburg. Still I must not growl. I have purposely kept back and have no right to criticize, save that I am glad that papers have at last found out we are at war and have a formidable enemy to combat. Of course I approve the confiscation act, and ought to be willing that the Government should amend that article of the Constitution which forbids the forfeiture of land to the heirs. My full belief, is we must colonize the country *de novo*, beginning with Kentucky and Tennessee, and should remove 4,000,000 of our people at once south of the Ohio river, taking the farms and plantations of the rebels. I deplore the war as much as ever, but if the thing has to be done, let the means be adequate. Don't expect to win such a country or subdue such a people in one, two, or five years—it is the task of half a century. Although our army is thus far south, I can not stir from our garrisons. Our men are killed or captured within sight of our lines. . . . To attempt to hold all the South would demand an army too large even to think of. We must colonize and settle as we go South, for in Missouri there is as much strife as ever. Enemies must be killed, or transported to some other country.

In December, in co-operation with a plan of Grant's to attack the Confederate army commanded by Gen. Pemberton on the Tallahatchie, Sherman moved down the eastern bank of the Mississippi, accompanied by Porter's fleet of gunboats, to attack Vicksburg in the rear. But unexpected natural obstacles were met, and the sudden capture of Grant's depot of supplies at Holly Springs thwarted the undertaking. Sherman vainly attacked the defenses on the north side of the city and lost 1,800 men.

In January, 1863, Gen. McClernand assumed command of the two corps commanded by Gens. Sherman and George W. Morgan, and at Sherman's suggestion the whole force ascended Arkansas river 100 miles to attack Fort Hindman or Arkansas Post. They landed on the 10th, and the next day, assisted by the fire of the gunboats, assaulted the work and captured it with its garrison of nearly 5,000 men. The loss to the national force was about 1,000. The fort was dismantled and its stores taken on board the boats, and the expedition returned. Grant now took command in person of the movement on the Mississippi and divided his army into four corps, of which Sherman commanded one, the Fifteenth. In the operations that resulted in the siege and capture of Vicksburg Sherman's corps bore a conspicuous part, and he was made a brigadier-general in the regular army, to date from July 4, 1863, the day the city was surrendered.

Soon after the fall of Vicksburg Gen. Halleck addressed a letter to Gen. Sherman, saying that "the question of reconstruction in Louisiana, Mississippi, and Arkansas will soon come up for decision of the Government, and not only the length of the war but our ultimate and complete success will depend upon its decision," and intimating that the President would like the views of generals in the field. In answer, Sherman wrote a long letter, from which the following significant and characteristic passages are taken:

I would deem it very unwise at this time, or for years to come, to revive the State governments of Louisiana, etc., or to institute in this quarter any civil government in which the local people have much to say. They had a government so mild and paternal that they gradually forgot they had any at all save what they themselves controlled; they asserted an absolute right to seize public moneys, forts, arms, and even to shut up the natural avenues of travel and commerce. They chose *war*; they ignored and denied all the obligations of the solemn contract of government, and appealed to force. We accepted the issue, and now they begin to realize that war is a two-edged sword, and it may be that many of the inhabitants cry for *peace*. I know them well, and the very impulses of their nature; and to deal with the inhabitants of that part of the South which borders on the great river, we must recognize the classes into which they have divided themselves:

First. The large planters, owning lands, slaves, and all kinds of personal property. These are, on the whole, the ruling class. They are educated, wealthy, and easily approached. In some districts they are bitter as gall, and have given up slaves, plantations, and all, serving in the armies of the Confederacy; whereas, in others, they are conservative. None dare admit a friendship for us, though they say freely that they were at the outset opposed to war and disunion. I know we can manage this class, but only by *action*. Argument is exhausted, and words have lost their

usual meaning. Nothing but the logic of events touches their understanding; but, of late, this has worked a wonderful change.

Second. The smaller farmers, mechanics, merchants, and laborers. This class will probably number three-quarters of the whole; have, in fact, no real interest in the establishment of a Southern Confederacy, and have been led or driven into war on the false theory that they were to be benefited somehow—they knew not how. They are essentially tired of the war, and would slink back home if they could. These are the real *tiers état* of the South, and are hardly worthy a thought; for they swerve to and fro according to events which they do not comprehend or attempt to shape. When the time for reconstruction comes they will want the old political system of caucuses, legislatures, etc., to amuse them and make them believe they are real sovereigns; but in all things they will follow blindly the lead of the planters.

Third. The Union men of the South. I must confess I have little respect for this class. They allowed a clamorous set of demagogues to muzzle and drive them as a pack of curs. Afraid of shadows, they submit tamely to squads of dragoons, and permit them, without a murmur to burn their cotton, take their horses, corn, and everything; and when we reach them, they are full of complaints if our men take a few fence-rails for fire, or corn to feed our horses. They give us no assistance or information, and are loudest in their complaints at the smallest excesses of our soldiers. Their sons, horses, arms, and everything useful, are in the army against us, and they stay at home, claiming all the exemptions of peaceful citizens. I account them as nothing in this great game of war.

Fourth. The young bloods of the South. Sons of planters, lawyers about towns, good billiard players, and sportsmen, men who never did work and never will. War suits them, and the rascals are brave, fine riders, bold to rashness, and dangerous subjects in every sense. They care not a sou for niggers, land, or anything. They hate Yankees *per se*, and don't bother their brains about the past, present, or future. As long as they have good horses, plenty of forage, and an open country, they are happy. This is a larger class than most men suppose, and they are the most dangerous set of men that this war has turned loose upon the world. They are splendid riders, first-rate shots, and utterly reckless. Stewart, John Morgan, Forrest, and Jackson, are the types and leaders of this class. These men must all be killed or employed by us before we can hope for peace. They have no property or future, and therefore can not be influenced by anything except personal considerations.

The people of all this region are represented in the Army of Virginia, at Charleston, Mobile, and Chattanooga. They have sons and relations in each of the rebel armies, and naturally are interested in their fate. Though we hold military possession of the key-points of their country, still they contend, and naturally, that should Lee succeed in Virginia, or Bragg at Chattanooga, a change will occur here also. We can not for this reason attempt to reconstruct parts of the South as we conquer it, till all idea of the establishment of a Southern Confederacy is abandoned.

It seems to me, in contemplating the history of the past two years, that all the people of our country, North, South, East, and West, have been undergoing a salutary political schooling, learning lessons which might have been acquired from the experience of other people; but we had all become so wise in our own conceit that we would only learn by actual experience of our own.

Another great and important natural truth is still in contest, and can only be solved by war. Numerical majorities by vote have been our great arbiter. Heretofore all men have cheerfully submitted to it in questions left open, but numerical majorities are not necessarily physical majorities. The South, though numerically inferior, contend they can whip the

Northern superiority of numbers, and therefore by natural law they contend that they are not bound to submit. This issue is the only real one, and in my judgment all else should be deferred to it. War alone can decide it, and it is the only question now left for us as a people to decide. Can we whip the South? If we can, our numerical majority has both the natural and constitutional right to govern them. If we can not whip them, they contend for the natural right to select their own government, and they have the argument. Our armies must prevail over theirs; our officers, marshals, and courts must penetrate into the innermost recesses of their land, before we have the natural right to demand their submission.

I would banish all minor questions, assert the broad doctrine that as a nation the United States has the right, and also the physical power, to penetrate to every part of our national domain, and that we will do it—that we will do it in our own time and in our own way; that it makes no difference whether it be one year, or two, or ten, or twenty; that we will remove and destroy every obstacle, if need be, take every life, every acre of land, every particle of property, everything that to us seems proper; that we will not cease till the end is attained; that all who do not aid us are enemies, and that we will not account to them for our acts. If the people of the South oppose, they do so at their peril; and if they stand by, mere lookers-on in this domestic tragedy, they have no right to immunity, protection, or share in the final results.

The issues are made, and all discussion is out of place and ridiculous. The action of thirty-pounder Parrott rifles now drilling before my tent is a more convincing argument than the largest Democratic meeting the State of New York can possibly assemble at Albany; and a simple order of the War Department to draft enough men to fill our skeleton regiments would be more convincing as to our national perpetuity than an humble pardon to Jeff. Davis and all his misled host.

I therefore hope the Government of the United States will continue, as heretofore, to collect in well-organized armies the physical strength of the nation; applying it, as heretofore, in asserting the national authority; and in persevering, without relaxation, to the end. This, whether near or far off, is not for us to say; but, fortunately, we have no choice. We must succeed—no other choice is left us except degradation. The South must be ruled by us, or she will rule us. We must conquer them, or ourselves be conquered.

President Lincoln read this letter carefully, and asked permission to have it published, but Sherman declined, and it did not appear in print till ten years after the war.

After the Mississippi had been cleared by the capture of Vicksburg and Port Hudson, the army was kept in comparative idleness for some months. Sherman's corps was encamped on the western bank of the Big Black river. After the battle of Chickamauga in September, which drove Rosecrans's army back to Chattanooga, Sherman was ordered to move eastward along the Memphis and Charleston Railroad, repairing it as he went. On Oct. 16 Gen. Grant was ordered to assume command of the departments of the Ohio, the Cumberland, and the Tennessee, to relieve Gen. Rosecrans at Chattanooga, and to make such changes in the subordinate commands as seemed necessary. Gen. Sherman was made commander of the Department and Army of the Tennessee.

On the 27th Sherman received orders from Grant to suspend work on the railroad and cross the country with his army as soon as possible to Bridgeport, below Chattanooga, which place he reached, by rapid marching, in the middle of

November. In Grant's dispositions for raising the siege of Chattanooga by driving the army of Bragg from its position on Lookout mountain and Missionary Ridge overlooking the town, Sherman's command was placed on the left, opposite the head of Missionary Ridge. Thomas was in the center and Hooker on the right. Sherman laid two bridges in the night of Nov. 23, and the next day advanced against the Confederate works, but the ground was very difficult, and he was only partially successful. Hooker and Thomas were completely so, and the enemy was routed. The task of Hooker and Thomas was lightened by the enemy's attacking Sherman heavily, hoping to crush him. After the battle he advanced promptly by the roads north of the Chickamauga, as far as Ringgold, destroying their communications.

Early in December, 1863, Sherman, by forced marches, went to the relief of Burnside, who was besieged in Knoxville by Longstreet, and arrived just in time to save him from defeat. In February, 1864, with troops from the corps of Harlbert and McPherson, he made a brief campaign to Jackson and Meridian to destroy the enemy's communications.

In the spring of that year Gen. Grant was made lieutenant-general, and planned a grand campaign in which all the military resources of the Northern States should be brought to bear at once upon the Confederacy and kept in active operation until its armies should be destroyed. To Sherman he assigned the command of the military division of the Mississippi. On Feb. 19 Sherman received the thanks of Congress for his services in the Chattanooga campaign, and in March he began repairing the railroads and making ready for the great task. He made his headquarters at Chattanooga, and concentrated his troops there. His force included the Army of the Cumberland, Gen. George H. Thomas; the Army of the Tennessee, Gen. James B. McPherson; and the Army of the Ohio, Gen. John M. Schofield. With about 93,000 men and 250 guns, leaving behind all unnecessary baggage, and taking no tents except for sick and wounded, he set forward on May 5 to attack the Confederate army at Dalton, which was commanded by Gen. Joseph E. Johnston, who had somewhat over 60,000 men (if counted in the same way in which Sherman's were counted). The campaign that followed, up to the date of Johnston's removal, July 17, is briefly described on page 399 of this volume.

Gen. John B. Hood, who succeeded Gen. Johnston, was as rash as Johnston had been cautious. On July 20, while Sherman's army was slowly closing in around Atlanta, the Confederates left their intrenchments along Peach-tree creek and made a heavy assault on the right of the national line, which was held by Thomas. There was terrible fighting, much of it hand-to-hand, for two hours, at the end of which time the Confederates were driven back to their works. Two days later Hood, by a flank movement, attacked Sherman's left, held by McPherson. The fighting was kept up from noon till night, and seven heavy assaults were repelled; after which Wood's division closed the battle with a counter-attack. On this day Sherman lost 3,500 men and 10 guns. Hood's loss

was never reported, but it was known to be much heavier. Gen. McPherson was killed, and Gen. Oliver O. Howard was promoted to command the Army of the Tennessee. This offended Gen. Hooker, who thought the promotion belonged to him, and he asked to be relieved. His corps was given to Gen. Henry W. Slocum.

Sherman now made another move by the right flank to threaten the enemy's communications, and on the 28th Hood made a bloody attack on his right, but did not effect anything. Sherman then sent out detachments of cavalry to break the railroads south of Atlanta, but with no satisfactory result. He therefore, after posting Slocum's corps at the bridge over the Chattahoochee, swung all the rest of his army, by a rapid and partly concealed movement, around to a position south of the city, where he destroyed the railroads and then advanced in force on Atlanta. He captured one brigade entire and 10 guns; but the greater part of Hood's forces, after setting fire to the Government property, escaped eastward, and Slocum's corps promptly moved in.

Gen. Sherman determined to make a purely military garrison or depot with no civil population, and he therefore ordered the inhabitants to leave the city, giving them their choice whether to go north or south; and this gave rise to an angry correspondence between him and Gen. Hood. The telegraph and railroad were repaired, and ample supplies were brought down from the North. For two months there was no significant change in the military affairs of that department. Sherman's army had reached the goal for which it set out, and the army of Hood moved about with apparently no very definite purpose, occasionally breaking the communications, which were quickly re-established, or attacking an outpost. At last Hood, late in October, moved to a point opposite Florence, on Tennessee river, and began collecting supplies for an invasion of Tennessee and Kentucky. Sherman sent Thomas to Nashville to meet this invasion, and proposed to march to Savannah with the remainder of his army; but he found considerable difficulty in persuading the President and Gen. Grant to consent to such a move. When at last he gained their consent he at once sent out men to cut the telegraph wires lest the orders should be countermanded, and years afterward he learned that they would have been countermanded had not the authorities at Washington found, as they supposed, that "the enemy had cut the wires." He sent to the rear all his sick and disabled men, and all baggage that could be spared, and had his men paid. When the last train left Atlanta he had a large section of the track destroyed and the bridges burned. Wagon trains were got in readiness and exact orders for the march were issued. The machine shops, depots, and other such buildings in Atlanta were torn down and fire set to the ruins.

Sherman had first definitely proposed the march to the sea in a telegram to Gen. Thomas, dated Oct. 9. On Nov. 12, with 55,000 infantry, 5,000 cavalry, and 1,800 artillerymen with 65 guns, he set out, and nothing more was heard of him till nearly Christmas. His army moved in two parallel columns, cutting through the State a swath 40 miles wide, and living off the coun-

try. Everything was done with perfect regularity. There were 2,500 wagons, each drawn by six mules, and these were distributed at intervals on the line. Foraging parties went out every morning, and what they obtained was brought to the line and placed in the wagons without stopping them for a moment. Nearly all of the Georgia Central Railroad was destroyed. No serious opposition was met, except that Wheeler's Confederate cavalry hung on the flanks of the army and occasionally had an engagement with Kilpatrick's. A few miles above Savannah there was some fighting with infantry, and Fort McAllister, guarding that city, was carried by storm. Here he established communication with the blockading fleet, and on Dec. 21 his troops marched into the city. His entire loss in the march to the sea was 764 men.

After remaining at Savannah four weeks, Sherman set out on a march northward through the Carolinas. He threatened both Charleston and Augusta, but passed between them and moved directly to Columbia. Thence he moved northeasterly, through Camden, Cheraw, and Fayetteville, to Goldsboro, and thence northward to Raleigh. This march was much more difficult than that through Georgia, for he had to cross large rivers, instead of moving parallel with them; but it lacked the mystery and romance of the other, and hence is not so famous. How he was opposed by a hastily gathered Confederate force under Gen. Joseph E. Johnston, at Averysboro and Bentonville, and how Johnston surrendered to him at Durham Station, near Raleigh, April 26, are told on page 400 of this volume. This great movement of Sherman's 60,000 veterans through the heart of the Confederacy hastened its downfall, and must shortly have compelled the surrender of Lee's army had his lines around Petersburg not been already broken by Grant.

The war being ended, Sherman's army passed in grand review in Washington, May 24, and a week later he took leave of them in a farewell order. For the next four years he was in command of the military division of the Mississippi, with headquarters at St. Louis. When Grant was made full general, July 25, 1866, Sherman was promoted to lieutenant-general; and when Grant became President, March 4, 1869, Sherman succeeded to the generalship, with headquarters at Washington. In 1871-'72 he made a professional tour in Europe. He was placed on the retired list, Feb. 8, 1884, and two years later he became a resident of New York city, living first at the Fifth Avenue Hotel and afterward in a house that he bought in West Seventy-first Street. His funeral was a grand military pageant, witnessed by tens of thousands of people. His body was taken to St. Louis and interred by the side of his wife, who had died about a year earlier. Gen. Sherman had in some respects a keener insight into men and affairs than any other of our great military men, and he was by far the ablest writer among them. His "Memoirs," written by himself, were published originally in 1875 (New York, 2 vols.), and were somewhat revised and re-issued in 1886. Besides this, his only book, numerous interesting letters of his are extant, for he was a voluminous correspondent. He had a genial and

kindly disposition, and enjoyed great personal popularity. He could easily have been President of the United States if he would have accepted the Republican nomination, and he was the only man that ever refused that office.

SOUTH CAROLINA.—A Southern State, one of the original thirteen, ratified the Constitution May 23, 1788; area, 3,750 square miles. The population, according to each decennial census, was 249,073 in 1790; 345,591 in 1800; 415,115 in 1810; 502,741 in 1820; 581,185 in 1830; 594,398 in 1840; 668,567 in 1850; 703,708 in 1860; 705,606 in 1870; 495,577 in 1880; and 1,151,149 in 1890. Capital, Columbia.

Government.—The following were the State officers during the year: Governor, Benjamin R. Tillman, Democrat; Lieutenant-Governor, Eugene B. Gary; Secretary of State, J. E. Tindal; Treasurer, W. T. C. Bates; Auditor, W. H. Ellerbe; Attorney-General, Y. J. Pope, elected a justice of the Supreme Court by the General Assembly on Dec. 3, and succeeded by J. L. McLaurin, who was elected by the General Assembly on Dec. 9; Superintendent of Education, W. D. Mayfield; Railroad Commissioners, D'Arcy P. Duncan, Eugene P. Jervey, and — Thomas; Chief-Justice of the Supreme Court, Henry McIver, elected by the General Assembly on Dec. 1, the office having been vacant since the death of Chief-Justice W. D. Simpson, in December, 1890; Associate Justices, Samuel McGowan, Henry McIver, promoted as above stated, and Y. J. Pope, elected by the General Assembly on Dec. 3.

Population by Races.—The following table shows the white and colored population of the State in 1880 and 1890, as reported by the Federal census:

COUNTIES.	WHITE.		COLORED.	
	1880.	1890.	1880.	1890.
Abbeville.....	17,120	18,172	81,727	27,637
Aiken.....	18,576	12,996	18,244	15,170
Anderson.....	25,174	18,747	18,592	14,865
Barnwell.....	14,010	13,453	30,692	26,168
Peanfort.....	2,523	2,442	31,443	27,782
Berkeley.....	7,661	.....	47,766	.....
Charleston.....	24,097	30,072	35,290	71,866
Chester.....	8,443	7,695	18,517	16,517
Chesterfield.....	10,992	9,498	7,665	6,847
Clarendon.....	6,915	6,282	16,318	12,908
Colleton.....	13,870	12,184	26,410	24,181
Darlington.....	11,659	12,329	17,174	21,326
Edgefield.....	17,655	16,018	32,268	29,826
Fairfield.....	7,151	6,885	21,548	20,880
Florence.....	10,400	.....	14,627	.....
Georgetown.....	4,120	8,416	16,387	16,146
Greenville.....	27,971	22,988	16,616	14,511
Hampton.....	6,807	6,286	18,787	12,478
Horry.....	13,639	10,692	5,617	4,942
Kershaw.....	8,440	7,892	13,521	13,746
Lancaster.....	10,098	7,995	10,492	8,707
Laurens.....	17,072	11,726	18,528	17,688
Lexington.....	13,755	11,696	8,475	7,467
Marion.....	14,474	15,881	15,624	18,226
Marlborough.....	8,829	8,126	14,641	12,271
Newberry.....	8,880	8,266	17,564	15,261
Oconee.....	13,631	11,955	5,045	4,501
Orangeburg.....	13,585	12,962	38,888	28,426
Pickens.....	12,194	10,673	4,195	3,716
Richland.....	11,825	9,185	24,594	19,284
Spartanburg.....	36,779	26,372	18,622	14,682
Sumter.....	11,717	9,279	31,884	27,628
Union.....	10,874	10,516	14,459	13,751
Williamsburg.....	9,250	7,738	18,265	16,632
York.....	15,088	14,613	29,733	16,620
The State.....	458,454	391,192	692,568	694,282

In 1890 there were also in the State 20 Chinese and 172 Indians.

Finances.—The following is a summary of the operations of the State treasury for the fiscal year: Cash on hand Oct. 31, 1890, \$77,943.93; receipts from all sources, \$1,073,752.98; total expenditures, \$1,087,081.89; balance on Oct. 31, 1891, \$64,615.02. The receipts were derived from the following sources: From taxes 1889-'90 and back taxes, \$776,895.57; from phosphate royalty, \$184,502.46; privilege tax on fertilizers, \$53,285.85; sinking fund commissioners, \$18,788.29; railroad assessments, \$9,748.48; official fees, \$8,970.07; special funds, \$17,459.22; other sources, \$4,111.04. The expenditures may be classified as follow: Legislative expenses, \$42,652.01; public printing, \$22,199.73; educational, charitable, penal, and sanitary institutions, \$201,762.34; Clemson Agricultural College, \$107,878.35; pensions, \$49,191.82; commissioner sinking fund warrants, \$27,106.35; interest on public debt and expenses, \$354,520.75; loan under act 1889 and interest, \$50,500; completion of State House, \$17,577.30; election expenses, \$16,377.56; refund taxes, \$10,479.31; maintaining militia, \$10,413; salaries, \$142,446.09; other purposes, \$33,977.28.

During the year the Sinking-fund Commission purchased and retired brown consols amounting to \$26,911.72, thereby reducing the total bonded State debt to \$6,406,606. The debt is classified as follows: Brown consols, \$5,393,076.70; blue 4½-per-cents., \$400,000; brown 4-per-cents., 1890, \$29,396.70; Agricultural College scrip, \$191,800; deficiency stock outstanding, \$717.72; bonds and stocks still fundable in brown consols, \$391,614.88. Under the acts of 1889 and 1890, the State Treasurer has made but little progress in exchanging the Brown consols for the new 4-per-cent. bonds authorized by those acts, only \$29,396.70 being exchanged. In addition to the funded debt, the State owes a large floating debt, amounting to \$489,197.33, of which \$271,890.07 is due for unpaid interest and \$106,608.07 for unpaid appropriations. The State has practically no sinking fund.

Legislative Session.—The regular annual session of the General Assembly began on Nov. 24 and adjourned on Dec. 24. The act of 1889 providing for refunding the brown-consol bonds and stocks due in 1893 was amended at this session so as to allow the Governor and the State Treasurer to offer a commission to persons who place the new bonds. All the funds in the State sinking fund, and the sum of \$30,000 in addition, were appropriated to pay such commissions. An anti-free-pass law was enacted, prohibiting any person while a member of the Senate or House of Representatives, State or national, or any State or county official, or any judge of a court of record, from using any free pass, express or telegraph frank, or complimentary ticket, or from riding on any railroad in the State without paying the usual fare. Transportation companies were forbidden to issue such passes, or to give any special rate to such officials.

Emigrant agents, who in recent years have induced many negroes to leave the State, were prohibited from plying their vocation, except under conditions, every such agent being re-

quired to pay to the State annually a license fee of \$1,000 for each county in which he does business.

Provision was made for distributing the money received from the United States as a refund of the direct tax to the persons who originally paid such tax, or to their legal representatives. The sum of \$4,000 was appropriated to be expended, under the direction of a public-record commission, in obtaining copies of documents from the public archives of England which relate to the early history of the State.

An institution for the training and higher education of white girls was established, under the name of the South Carolina Industrial and Winthrop Normal College, the location to be determined by the board of trustees of the institution. The grounds, buildings, and equipment must be secured and transferred to the State without expense on its part, but the State undertakes the management of the institution after it is thus equipped. The members of the Lower House of the General Assembly were reapportioned to the several counties according to the census of 1890.

Other acts of the session were as follow:

Providing that no crop mortgage shall convey any interest in any crop other than that raised during the year in which the mortgage is given, and unless the land on which it is to be raised shall be described in said mortgage.

Accepting the provisions of the act of Congress under which the direct tax of 1861 was refunded to the several States.

To protect and encourage the planting and cultivation of shell-fish, to create the office of fish commissioner, and to authorize the granting of franchises for the use of certain lands under water belonging to the State.

Requiring the Sinking-fund Commissioners and the Fish Commissioner to establish regulations for the protection of the natural oyster beds of the State.

Education.—For the school year ending in 1891, 93,024 white children and 116,535 colored children were enrolled in the public schools, a total of 209,559. The average length of the school year was 3:21 months.

The South Carolina University, which has existed for nearly a century, was reorganized under the act of December, 1890, so that its work is now confined to liberal studies, the departments of science and agriculture having been transferred to Clemson Agricultural College. This change has reduced the number of students. For the school year 1890-'91 the number of attendants was 182, while for the session of 1891-'92 96 were matriculated. Work has progressed during the year on the buildings for the Clemson Agricultural College, and though they are not near completion the roll of applicants for admission numbered 870 at the close of the year. There had been expended up to Oct. 31, 1890, in the erection of buildings \$17,085.35, and during the fiscal year ending Oct. 31, 1891, \$106,127.26, making a total of \$123,212.61.

At the South Carolina Military Academy there were 166 pupils during 1890-'91.

Charities.—During the year 311 patients were admitted to the State Insane Asylum, 394 were discharged, and 747 remained, of whom 432 were white and 315 colored. The total income, including \$100,000 appropriated by the State,

was \$122,642.16, and the total expenses were \$113,706.37, leaving a balance of \$8,935.79.

At the Deaf, Dumb, and Blind Institute 133 pupils were enrolled during the year, 91 being deaf and 42 blind. The average attendance was 99. The receipts, including the State appropriation of \$14,000, were \$15,350.50, and the expenditures \$14,681.85, leaving a balance of \$668.65.

Penitentiary.—On Oct. 31 there were 793 persons confined in the State Penitentiary, against 791 on Oct. 31, 1890. The Columbia Canal, on which about 200 prisoners have been employed, was completed during the year, and a large majority of the convicts are now employed in farming, the State having purchased a farm to be worked by them. The revenue from convict labor during the year was not more than sufficient to meet the expenses of the institution.

Militia.—The total active militia of the State numbers 4,974 men, divided as follows: Cavalry, 28 companies, 1,224 officers and men; artillery, 3 companies, 540 officers and men; infantry, 43 companies, 2,373 officers and men; and National Guards, 16 companies, 837 officers and men.

Phosphate Commission.—On this subject Gov. Tillman reports as follows: "On the 1st of March, in accordance with the instructions of the act creating the commission, we took possession of Coosaw river and issued licenses to mine therein to three companies. Two of these entered the river, but were enjoined in the United States Court." The suit under which this injunction was issued is now pending on appeal before the United States Supreme Court, the question being upon the right of the State to grant such licenses.

Mining.—The value of the precious-metal product of South Carolina for 1890 was \$100,177.64, being an increase of \$530 over that of the preceding year. The product of gold was \$99,777.64, and of silver \$400. The production by counties was as follows: Chesterfield, \$20,841.81; Lancaster, \$76,339.92; Spartanburg, \$4,959.19; Union, \$500; miscellaneous, \$2,000. Nearly all comes from the Haile mine, in Lancaster County, and the Brewer mine, in Chesterfield County.

SOUTH DAKOTA, a Western State, admitted to the Union Nov. 3, 1889; area, 77,650 square miles; population, according to the census of 1890, 328,808. Capital, Pierre.

Government.—The following were the State officers during the year: Governor, Arthur C. Mellette; Lieutenant-Governor, G. H. Hoffman; Secretary of State, A. O. Ringsrud; Treasurer, W. W. Taylor; Auditor, L. C. Taylor; Attorney-General, Robert Dollard; Superintendent of Public Instruction, Cortez Salmon; Commissioner of School and Public Lands, Thomas H. Ruth; Commissioner of Labor, R. A. Smith. All these officers are Republicans. Chief Justice of the Supreme Court, A. G. Kellam; Associate Justices, Dighton Corson and John E. Bennett—all Republicans. The Senate consists of 23 Republicans, 7 Democrats, and 14 Independents. The House has 60 Republicans, 19 Democrats, and 45 Independents.

Valuations.—The State Board of Equalization and Assessment assessed nearly a million acres of land more than in 1890. Horses this year are assessed at \$34.62; cattle, \$9.25; mules

and asses, \$36; sheep, \$1.71; swine, \$1.77. Bank stock is assessed at 55 cents on the dollar. The State and bond levy is 2-5 for this year, and the levy on telegraph, telephone, express, and sleeping-car companies is 1-2-5.

Education.—Disagreements at the State University at Vermilion culminated in the resignation of President Howard B. Grose in May, the closing of the institution in June, within a week of the time set for commencement, and the discharge of the old members of the faculty. At a special meeting of the board of directors in September, Dr. Charles O. Merica, of Mt. Pleasant, Iowa, a graduate of De Pauw University and a member of the faculty of Iowa Wesleyan University, was chosen president.

Yankton College enrolled 227 students in the year 1890-'91, and graduated a class of six. The Rev. E. F. Williams, D. D., of Chicago, was elected president; E. A. Bechtel, of Johns Hopkins University, to the professorship of Latin; and Prof. G. E. Culver, formerly of Dakota University, to that of Chemistry and Physics. An endowment has been made for the physical culture department. About 75 new students were enrolled in September.

The South Dakota Chautauqua Assembly held its first summer school at Lake Madison in July and August.

Crops.—Following is the average estimated yield in bushels per acre of staple crops, compiled from reports by regular correspondents of the State Weather Service, co-operating with the United States Department of Agriculture: Wheat, 17-6; oats, 39-8; corn, 30-7; barley, 31-8; rye, 19-7; potatoes, 139-5; flax, 9-6; sugar beets, 25-5.

The total wheat crop of the State is estimated at 32,000,000 bushels, oats at 27,500,000 bushels, corn at 26,000,000 bushels, barley at 5,500,000 bushels, rye at 700,000 bushels, flax at 4,000,000 bushels, and potatoes at 5,000,000 bushels.

The crop bulletin of September placed the State second as a wheat producer, marking it 99, and Minnesota 100. The of flax on 354,957 acres gave a harvest of 1,801,115 bushels of seed.

Mining.—The tin mines in the Black Hills are in active operation. The tin is claimed to be not so fine as the Cornish tin, but purer and easier to mine. One company reported in August 40,000 tons of ore ready for shipment, with 100,000 tons more in sight in the mines. This company has in hand the erection of a mill capable of disposing of 500 tons of ore a day. Nuggets have been found weighing from 30 to 75 pounds, and yielding over 75 per cent. of pure white metal. A property including 62 claims and 240 acres of placer ground in the Black Hills was sold in May for \$475,000 to the Rapid City Land and Improvement Company.

The total product of the precious metals for 1890, according to the report of the Director of the Mint, was, approximately, \$3,278,000; gold, \$3,112,000; silver, \$156,000.

The Soldiers' Home.—The report at the annual meeting in June showed a total of 75 inmates. One wing of the hospital was ordered built during the summer. The grounds south of the glen were ordered platted, and are to be leased to veterans whose wives are forty-five years of age or over, for sites for cottages. It

was decided to admit disabled veterans who have dependent families, if their income does not exceed \$400 per annum. Experience has shown that the pensions, if allowed to the inmates, cause much demoralization; and it was therefore thought best to make a rule that those having families should assign them the pensions, excepting a small amount for spending-money, and those who had not should place their pensions in the hospital fund, since the appropriation is not large enough to provide help in that department.

The Insane Hospital.—The whole number of inmates in this institution is 283, of whom 163 are men and 120 women.

Legislative Session.—The second Legislature met on Jan. 6, and adjourned on March 7. Much of the early part of the session was consumed in the election of a United States Senator to succeed Gideon C. Moody, whose term of office expired. The candidates of the three parties were changed during the course of the balloting, and at the fortieth ballot the choice fell on Rev. James H. Kyle, of Aberdeen, the Independent candidate. He received 75 votes, against 55 for Sterling, Republican. Considerable excitement was caused toward the close of the balloting by a resolution in which it was declared to be a "matter of common notoriety, based upon what appears to be good authority," that negotiations were pending between the Democrats and the Independents of Illinois and South Dakota. The object of these negotiations was said to be the election of the Democratic candidate in Illinois by the help of Independent votes, in exchange for Democratic help to the Independents in South Dakota.

The new Senator is a Congregational clergyman, a graduate of Oberlin College and of Allegheny Theological Seminary. He has had charge of several churches in the West, and was for some months previous to his election financial agent of Yankton College. In the election of 1890 he was chosen State Senator from Brown County, having attracted the favorable attention of the Farmers' Alliance party, it is said, by his utterances in a Fourth of July oration at Aberdeen. In the senatorial contest his name was substituted for Gen. Campbell's on the Independent ticket, on the thirty-first ballot. Senator Kyle took his seat on the Democratic side of the Senate chamber.

The Australian election law was passed, and a new revenue system was adopted. The penalty on delinquent taxes was changed from 3 to 1 per cent. on March 1, and 1 per cent. each month thereafter. Interest on delinquent taxes was cut down from 20 to 12 per cent. The county and State boards of equalization were given power to raise and lower assessed valuations, instead of power to raise them only.

A new apportionment reduced the membership of the Legislature from 169 to 126, giving the Senate 43 in place of 45, and the House 83 in place of 124.

A bill for township irrigation by artesian wells became a law. It was also made applicable to counties not having township organization.

A school law providing for uniformity of system throughout the State was one of the results of the session. A bill prohibiting an agreement

for the payment of mortgage indebtedness in any particular kind of money passed both Houses. It was feared that this law would prove a disadvantage to borrowers by causing the withdrawal from the State of many loan companies.

Among bills passed was a new fence law, which is of importance to the grazing interests. It provides that all unorganized counties of the State and all counties hereafter to be organized shall allow stock to run at large until decided otherwise by a majority of the people. The law has been tried in the Black Hills with success. The people of Pierre and representatives of the Black Hills are enthusiastic over the success of the bill.

Another measure that was passed makes it necessary for the auditor to turn over all insurance fees received, thus abolishing the office of commissioner of insurance.

A bill authorizing the Governor to convey to the United States Government, under certain conditions, the Soldiers' Home at Hot Springs, was vetoed, but was passed over the veto.

Other measures enacted were as follow :

Providing that school funds shall be invested only in first mortgages on farm lands and in State and national bonds.

Providing for the organization and management of State banks.

Accepting grants of money to the Agricultural College from Congress.

Making conveyance of homesteads valid and legal in case the owner is married, whether executed by joint instrument or separate instrument.

Prohibiting dower and courtesy, and confirming all conveyance of real estate except that of homestead.

Refunding Insane Hospital bonds.

Changing the name of Dakota Agricultural College to South Dakota Agricultural College, and also prefixing "South" to the name of Dakota University.

Providing for the issuance of funding warrants in payment of outstanding warrants, whenever such funding warrants can be negotiated at their face value or at a premium.

Authorizing the Board of Regents to hold farmers' institutes at the Agricultural College, for instruction in farming and dairying.

Limiting the tax levy in cities to ten mills; also limiting bonded indebtedness.

Joint resolution asking Congress to modify the patent and copyright laws, and to provide for construction of elevators for storing farm products.

To punish the creation of indebtedness against the State and the drawing of warrants without express appropriation; and fixing penalty of a fine of \$1,500 and imprisonment for not less than two or more than five years for violation.

Allowing counties to bond for irrigation.

The following is the list of appropriations for 1891-'92: For State officials, \$72,000; expenses of State offices, \$28,800; Legislature, \$73,418; printing, \$10,000; State University, \$41,100; Madison Normal School, \$18,600; Spearfish Normal School, \$21,400; Reform School, \$32,000; Agricultural College, \$12,000; School of Mines, \$16,000; Deaf-mute School, \$24,700; Penitentiary, \$57,900; Insane Hospital, \$120,500; Soldiers' Home, \$32,906; bonded indebtedness, \$108,000; public examiner, \$4,200; State militia, \$8,000; insurance of public buildings, \$1,800; Board of Charities, \$3,000; Board of Regents, \$2,000; mine inspector, \$4,000; Board of Agriculture, \$4,000; railroad commissioners, \$10,000; Commissioner of Labor and Statistics, \$2,750; main-

tenance of State House, \$6,140; trustees of educational institutions, \$3,000; commissioners of Soldiers' Home, \$1,500; engineer of irrigation, \$3,000; clerks at land office, \$1,200; total, \$723,914.

Prohibition.—A bill was introduced into the Legislature early in the session to resubmit the question of prohibition to the people, and was lost on the last day in the Senate, by a vote of 18 to 20, 7 members being absent. Actions were brought in Lawrence County in July, to test the validity of the law. The demurrers were sustained in all the four cases, the judge holding that the law is unconstitutional, on the ground that the title to the law does not fulfill the requirements of the Constitution which says, section 21, Article III, "No law shall embrace more than one subject, which shall be expressed in its title." The matter remains to be settled by the Supreme Court.

The World's Fair.—Attempts were made to secure an appropriation for a State exhibit at the World's Fair, but the Legislature adjourned without any such action. A convention, therefore, met at Yankton in May for the purpose of devising some method for meeting the expense of an exhibit. A commission of 18 members was selected to represent the State at the fair and have charge of its exhibit, and it was resolved to ask the Governor to call a special session of the Legislature to make an appropriation, in case a majority of the members would pledge themselves to vote for such appropriation, and that no other business be introduced.

The commission issued an address in September, in which it said that it was convinced, after proper effort, that no aid could be secured from the State treasury, and called for voluntary subscriptions to the amount of \$80,000. The project of an extra session was afterward revived, and the Governor promised to call one in case the commission would pledge itself that the extra session should cause no expense to the State.

Indian Lands.—The Indian title has been extinguished to all reservations east of the Missouri except the Yankton, and efforts are in progress to induce the Yanktons to sell, reserving only enough to give each member of the tribe a farm. A petition signed by 792 of the Sioux, was sent to Washington, asking for \$10,000,000 for the loss of game and other things. It says:

SEN: We Indians wants to get paid for all these wild animals, once we live upon for our food. Not only those things, also there are all kinds of iron was found here, and I should mention some of names of these things. Buffalo, elk, black-tail deer, long-tail deer, big wolf, all other kinds of deer and wolf; also gold, silver; also all other kinds of iron.

The Sisseton and Wahpeton reservation will be thrown open to settlers in April, 1892. This consists of about 600,000 acres. It is a triangle about 70 miles long, decked with lakes and surrounded by a thrifty and well-settled country. The reservation has about a million acres, but the 300 or 400 adult Indians take their allotments first, and sections are set apart for school and other purposes. The lands are among the best for wheat and general agricultural uses in South Dakota.

State Lands.—A question has been before the General Land Office as to whether the com-

missioner of school and public lands could select lands upon the great Sioux reservation recently thrown open to settlement. The decision is that the land can not be selected upon these reservations. If the decision is upheld it will compel the selection of about 700,000 acres of indemnity lands from a small area in the Black Hills. A report in November of the inspection of the vacant lands for the purpose of selecting the 750,000 acres appropriated shows that the land commissioner has selected 500,000 acres and has already filed upon 400,000 acres. About 200,000 acres was selected in the Black Hills country, and the other 300,000 acres in the counties of Hand, Hyde, Codington, Day, Potter, Edmunds, McPherson, Walworth, and Campbell, these being all the counties east of the river where vacant lands can be found. The remaining 250,000 acres which are due the State the commissioner is in no hurry to select.

At the sale of school lands in the spring the average price realized was \$14.05½ an acre, and the entire amount \$631,528.20; of which the amount paid down was \$164,271.50.

The Northern Boundary.—At the session of Congress of 1890-'91 an appropriation of \$25,000 was made for marking the boundary between the Dakotas. The line is 361½ miles long. The 157 miles that have already been surveyed are to be reviewed and the survey completed; it is expected that the work will be finished in 1892. The line will be marked with 725 granite pedestals from the Sioux Falls quarries.

Irrigation.—The experiment of irrigating land from artesian wells has been largely tried, and has proved successful. The water can be first used for domestic and manufacturing purposes. A report in June says: "The artesian belt of James river valley is the largest body of water of its character known to the world, containing about 7,000,000 acres, of which 98 per cent. could be made available for tillage. There are in all nearly or quite 100 flowing wells in Dakota. The flow of water ranges per minute from 4,000 gallons at Columbia, 3,500 at Aberdeen, and 1,500 at Yankton. The depth of these wells is from 1,576 feet at Jamestown to 600 at Yankton and Frankfort."

The only fear has been that the source of water supply might prove inadequate when great numbers of wells were sunk, but Government experts who have made careful survey of the country say that no fear need be entertained on that score. In one locality two of these wells stand 700 feet apart and pour forth powerful streams constantly.

Missouri River Improvement.—Chas. F. Powell, engineer in charge, reports almost a complete survey of the river from Benton to Bismarck. He asks for an appropriation of \$150,000 for the rectification of the river at important commercial points in order to reclaim the steamboat landings, which have been injured by a shifting of the channel to the opposite side.

A pontoon bridge has been built across the river at Yankton, having a roadway 850 feet in length supported by 39 pontoons.

Railroads.—So large was the crop this year that means of transportation were procured with difficulty. Several new lines are under discus-

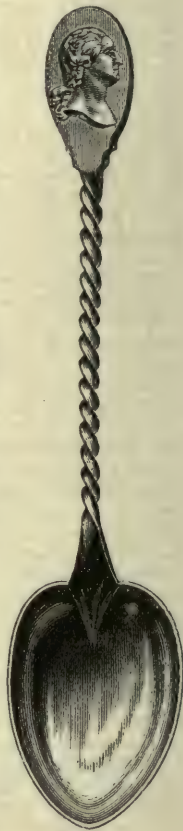
sion—the extension of the Illinois Central into the Black Hills country; that of the Chicago, St. Paul, Minneapolis and Omaha to Niobrara or Yankton; that of the Fremont, Elkhorn and Missouri Valley to West Niobrara; and a line to connect Yankton with the Nebraska system of the Northwestern passing through Cedar and Knox Counties; while the Rapid City and Missouri River and St. Paul is expected to have cars running into the Black Hills before another winter. A bill was introduced into Congress to authorize the construction of a drawbridge across the Missouri at Yankton by a company incorporated for that purpose, for the use of any or all railways constructed to cross the river at that point, and also for wagons and pedestrians; it was referred to the Committee on Commerce.

Special Election.—Hon. John R. Gamble, one of the representatives of the State in Congress, died at Yankton, Aug. 14, 1891. The Governor issued a proclamation on the 26th calling for a special election to be held Nov. 3. The Republicans nominated John L. Jolley, of Clay County; the Democrats, James M. Woods, of Rapid City; and the Independents, Henry W. Smith, of Wayne. The election resulted as follows: Jolley, 17,614; Smith, 14,587; Woods, 7,188. The new (Australian) election law was tried at this election with good success.

SOUVENIR SPOONS. No fad of recent times has advanced so rapidly and taken so strong and perhaps permanent a hold as that of souvenir spoons. These medals—for they are pieces of metal “bearing devices and inscriptions struck or cast to commemorate a person, an institution, or an event”—are generally of silver, sometimes with gold bowl, but seldom all of gold. In shape they are usually of coffee, tea, or orange pattern; sometimes pap, dessert, sherbet, chocolate, sugar, and bon-bon forms are offered; while the design at times extends to almond scoops, pickle forks, sardine forks, ice-cream forks, child's forks, butter knives, butter spreaders, paper knives, and sugar tongs.

It is said that the oldest piece of silverware known is a spoon. Before knives or forks were employed the spoon was a household necessity. The derivation of the fad was from Europe, and tourists for many years have collected copies of the celebrated apostles' spoons. Special designs characteristic of places on the Continent have long been known. In the summer of 1887 M. W. Galt, of Washington, D. C., while traveling abroad conceived the idea of applying the fancy to this country, and on his return produced the first Washington spoon, showing the head of the Father of his Country. From the outset the venture proved a success, and a year later Daniel Low, of Salem, Mass., brought out his first witch spoon. Thus started, the idea grew until it has extended to every place of importance in the country, and even many of the smaller towns have their souvenir spoons. For the most part these spoons chronicle some historical event connected with the locality, or else a characteristic building or scene; failing in these, the memory of some distinguished person is perpetuated by the spoons. At first the designs were simple, but many are now quite complex. The most interesting spoons are those of the Eastern States, of which the following are representa-

tive: Newburyport shows the eccentric figure of Lord Timothy Dexter; Plymouth, the landing of the Pilgrims, or else the rock itself; Lynn, Moll Pitcher and her black cat; Hartford, the Charter Oak; Springfield, the likeness of her pioneer, Miles Morgan; Boston, the pot of baked beans; Cambridge, the statue of John Harvard; and Portland, her observatory. New York has several designs, one showing the East River Bridge; another, the Bartholdi statue; still another, Peter Stuyvesant; while Philadelphia has Independence Hall and Liberty Bell on her spoons. Albany preserves the memory of Diedrich Knickerbocker; Buffalo shows the head of a bison; Rochester, her famous Genesee Falls. To the South, Baltimore has her battle monument and the terrapin and oyster; Charleston, Fort Sumter; and Savannah, Gen. Greene's monument and her City Hall; while Jacksonville has an alligator, and St. Augustine the city gates. Atlanta commemorates her orator, Henry W. Grady; Richmond, the monument of Robert E. Lee; St. Louis shows the Veiled Prophet; Denver, her Rainbow Falls; San Francisco, the Golden Gate; Portland, Oregon, Mount Hood; St. Paul, Fort Snelling; and Minneapolis, the Flour City, a bag of wheat. For description of these, and illustration, see “Souvenir Spoons of America” (New York, 1891). Besides the foregoing there are numerous spoons pertaining to distinguished individuals, as the Ben Butler spoon of Lynn, Mass., the Chauncey M. Depew spoon of Peekskill, the Longfellow, Whittier, Gen. Sherman, John Brown, and similar spoons. Perhaps among these should be included the several Christopher Columbus spoons, the Frances E. Willard and Sarah Bernhardt spoons. The Grand Army of the Republic, the Benevolent Order of Elks, the Chautauqua Literary and Scientific Circle, the King's Daughters, and similar organizations, have special spoons. There are certain State spoons, as that of Kansas with its sheaf of wheat, and the New Jersey with its handle representing a cat-tail, and a mosquito in the bowl. Also there are special national spoons, as the Brother Jonathan, the historical cannon, All America, and Uncle Sam. Spoons with appropriate designs for Easter and for card parties (known as whist and euchre spoons) exist. Several special designs have been made to present at theatres on souvenir nights; also in several instances they have been used for ad-



vertising; thus special guests of certain hotels are presented with spoons, and certain large manufacturing firms have given spoons of characteristic designs to favored individuals. The following list gives as far as possible the places where special souvenir spoons can be procured: Alaska, Albany, Atlanta, Baltimore, Bar Harbor, Boston, Bridgeport, Brooklyn, Buffalo, California, Cambridge, Catskills, Charleston, Chicago, Cleveland, Concord, Mass., Dayton, Denver, Detroit, District of Columbia, Florida, Gettysburg, Hartford, Haverhill, Johnstown, Kansas City, Lexington, Lincoln, Lockport, Los Angeles, Louisville, Lynn, Macon, Manitou, Memphis, Milwaukee, Minneapolis, Mount Vernon, Mount Washington, Narragansett, New Bedford, Newburgh, New Haven, Newport, New York, Niagara, Omaha, Philadelphia, Pittsburg, Pittsfield, Plymouth, Portland, Me., Portland, Ore., Portsmouth, Providence, Quebec, Reading, Richmond, Rochester, Salem, San Francisco, Saratoga Springs, Savannah, St. Augustine, St. Louis, St. Paul, Steubenville, Syracuse, Toronto, Troy, Utica, Waltham, Washington, Watch Hill, Worcester. The following personal spoons have been made: Ethan Allen, George Bancroft, P. T. Barnum, Henry Ward Beecher, Daniel Boone, John Brown, Benjamin F. Butler, Sarah Bernhardt, Christopher Columbus, Chauncey M. Depew, Timothy Dexter, Neal Dow, Hannah Dustin, Leif Ericsson, Benjamin Franklin, James A. Garfield, U. S. Grant, John Harvard, Anneke Jans, Diedrich Knickerbocker, Robert E. Lee, Abraham Lincoln, Henry W. Longfellow, Miles Morgan, Moll Pitcher, Priscilla Alden, Israel Putnam, Paul Revere, William T. Sherman, Miles Standish, Peter Stuyvesant, George Washington, John G. Whittier, Frances E. Willard, and Roger Williams.

SPAIN, a monarchy in southern Europe. The royal prerogative is exercised during the minority of the infant King, Alfonso XIII, born May 17, 1886, the posthumous son of Alfonso XII, who died Nov. 25, 1885, by the Queen-mother Maria Christina, daughter of the Archduke Karl Ferdinand of Austria. She first took the oath as Queen-Regent on Nov. 26, 1885, to serve during the minority of her daughter, Maria de la Mercedes, who was proclaimed Queen on her father's death. When a male heir was born he succeeded his sister, and the Queen-mother was sworn again to act as Regent for the King. The legislative power is vested in the Cortes, consisting of the Senate and the Congress, which have concurrent and equal authority. There are 100 life Senators nominated by the King; about 80 Senators by right of birth or office, viz., *Grandees of Spain* with 60,000 pesetas income, princes of the blood royal, the chief judges, archbishops, captains-general, and admirals; and 180 Senators chosen for five years by the provinces, communes, universities, and ecclesiastical bodies. The Congress consists of 431 Deputies, of whom 88 are elected in 26 districts on collective tickets, with provision for the representation of minorities, 10 may be chosen by a cumulative vote in several districts, and the rest are chosen by the Electoral Juntas of the ordinary districts in the proportion of 1 to 50,000 inhabitants in Spain, and 1 to 40,000 free persons in the Antilles. The Ministry constituted July 5, 1890, was made up of the

following members: President of the Council, Antonio Canovas del Castillo; Minister of Foreign Affairs, C. M. O'Donnell, Duke of Tetuan; Minister of Finance, F. Cos-Gayon; Minister of the Interior, F. Silvela; Minister of Justice, R. F. Villaverde; Minister of Instruction, and of Commerce and Agriculture, S. de Isasa; Minister of War, Gen. de Ascarra; Minister of Marine, J. M. Beranger; Minister of the Colonies, A. Fabié.

Area and Population.—The area of Spain, including the Canary and Balearic Isles and 13 square miles on the northwest coast of Africa, is 197,670 square miles. The population, according to the corrected returns of the census of Dec. 31, 1887, was for Continental Spain, 16,955,090; for the Canaries, 291,625; for the Balearic Islands, 312,593; and for the district in northern Africa, 5,280; making a total of 17,544,588. The legal population on Dec. 31, 1877, was 17,650,234, comprising 8,724,846 males and 8,925,388 females. The population of the chief cities was as follows: Madrid, 470,283; Barcelona, 272,481; Valencia, 170,763; Sevilla, 143,182; Malaga, 134,016; Murcia, 98,538; Saragossa, 92,407; Grenada, 73,066; Cadiz, 62,531; Valladolid, 62,012; Palma, 60,514.

Finances.—The revenue as estimated in the budget for the year ending June 30, 1892, is 815,551,387 pesetas or francs, of which 269,549,110 pesetas are the product of direct taxes, 298,985,000 pesetas come from indirect taxes and customs, 170,856,000 pesetas from stamps and *régie* enterprises, 35,571,277 pesetas from Government property, and 30,510,000 pesetas from the public treasury. The expenditures are estimated at 810,663,413 pesetas, of which 9,500,000 pesetas are for the civil list, 1,749,205 pesetas for legislative expenses, 262,803,189 pesetas for the public debt, 1,888,733 pesetas for judicial expenses, 52,481,545 pesetas for indemnities and pensions, 1,584,217 pesetas for the presidency of the Council of Ministers, 5,160,692 pesetas for the Ministry of Foreign Affairs, 56,758,958 pesetas for the Ministry of Justice, 146,220,530 pesetas for the Ministry of War, 32,088,598 pesetas for the Ministry of Marine, 29,167,893 pesetas for the Ministry of the Interior, 88,269,724 pesetas for the Ministry of Public Works, 19,104,714 pesetas for the Ministry of Finance, and 84,085,915 pesetas are the cost of collecting the revenue. The funded public debt on Jan. 1, 1890, amounted to 6,207,027,484 pesetas, on which the interest, reckoned for the most part at 4 per cent., was 233,312,491 pesetas. The floating debt was 285,210,000 pesetas, and the Cuban debt about 250,000,000 pesetas.

The Army.—Military laws enacted in 1877, 1878, and 1882 make service obligatory from the age of twenty for twelve years, of which three are passed in the active army, three in the first reserve, and six in the second reserve. Exemption may be purchased by the payment of 1,500 pesetas, and substitution among brothers is allowable. The peace effective in 1891 was as follows: Infantry, 90,327 men; cavalry, 13,968 men, with 11,887 horses; artillery, 11,340 men, with 392 guns; engineers, 4,279 men; artificers, 1,185 men; sanitary corps, 506 men. Including officers, the total peace strength is about 120,000 men, exclusive of the gendarmier. The war

effective is approximately estimated at 734,680 infantry; 23,300 cavalry, with 18,500 horses; 30,350 artillery, with 460 cannons; 7,500 engineers; 1,900 workmen; 670 sanitary troops; and 7,000 territorial troops in the Canary Islands; making a total of 805,400 men, without reckoning the troops in the colonies. The Government has decided to adopt the Mauser rifle for the infantry.

The Navy.—The naval forces consist of 2 first-class ironclads built in 1886, 2 second-class ironclads, 4 unarmored ships of the first, 8 of the second, and 13 of the third-class, 4 gunboats, 32 small steamers, 13 torpedo boats, and 6 transports. There were under construction 2 first-class armorclads, 1 of the second class, 2 first-class, 1 second-class, and 4 third-class unarmored steamers, 1 deck-protected cruiser, and 3 armored gunboats. The "Biscaya," the second of three plated cruisers ordered in June, 1889, from the firm of Rivas & Palmer, of Bilbao, was launched on July 8, 1891, and the third was launched in October. The "Biscaya" is similar in all details to the "Infanta Teresa," which was launched in September, 1890.

Commerce.—The total value of imports in 1889 was 866,311,000 pesetas, and of exports 896,856,000 pesetas. The foreign commerce was divided among the principal nations as is shown in the following table, giving the values of the imports from and of the exports to each one in pesetas:

COUNTRIES.	Imports.	Exports.
France.....	264,800,000	886,500,000
Great Britain and Gibraltar.....	161,800,000	211,200,000
Germany.....	53,500,000	15,000,000
Belgium.....	30,000,000	19,900,000
Portugal.....	16,900,000	43,500,000
Sweden and Norway.....	29,000,000	1,400,000
Russia.....	19,700,000	800,000
Italy.....	19,500,000	9,500,000
Turkey.....	12,700,000	.....
Netherlands.....	1,400,000	16,500,000
America.....	180,700,000	161,800,000
Philippine Islands.....	23,100,000	8,700,000
Northern Africa.....	18,500,000	7,200,000
Other countries.....	35,700,000	14,700,000
Total.....	866,300,000	896,900,000

The principal imports and their values were as follow: Cotton, 89,167,000 pesetas; woods, 45,947,000 pesetas; coal, 40,374,000 pesetas; sugar, 35,523,000 pesetas; machinery, 33,652,000 pesetas; woolen goods, 29,839,000 pesetas; tobacco, 28,800,000 pesetas; codfish, 27,435,000 pesetas; iron, 26,580,000 pesetas; wheat, 26,156,000 pesetas; hides and skins, 19,190,000 pesetas; chemicals, 16,603,000 pesetas; silk manufactures, 14,762,000 pesetas; linen thread, 14,723,000 pesetas; spirits, 14,484,000 pesetas; cotton goods, 13,273,000 pesetas; animals, 13,109,000 pesetas; cacao, 12,853,000 pesetas; petroleum, 11,820,000 pesetas; ships, 10,051,000 pesetas. The values of the chief exports of domestic products were as follow: Wine, 282,441,000 pesetas; copper, 61,812,000 pesetas; iron, 55,568,000 pesetas; lead, 48,358,000 pesetas; olive oil, 26,827,000 pesetas; cork, 21,606,000 pesetas; animals, 21,083,000 pesetas; oranges, 19,554,000 pesetas; raisins, 17,340,000 pesetas; boots and shoes, 15,917,000 pesetas; wool, 15,531,000 pesetas; quicksilver, 11,057,000.

Navigation.—The number of vessels entered at Spanish ports during 1889 was 53,549, of 22,905,463 tons, including 475 vessels of war, of 563,935 tons. Of the merchant vessels, 38,852, of 9,995,333 tons, were Spanish, and 14,222, of 12,346,195 tons, were foreign. The merchant marine in 1890 comprised 1,359 sailing vessels of over 50 tons, having an aggregate burden of 253,426 tons, and 350 steamers of over 100 tons, of the aggregate net tonnage of 273,819 tons.

Railroads, Posts, and Telegraphs.—The total length of the railroads at the beginning of 1889 was 6,043 miles. All the railroads were built and operated by private companies, though nearly all had their bonds guaranteed or received subsidies from the Government.

The post-office in 1889 forwarded 99,751,000 domestic and 12,600,000 international letters, 918,000 domestic and 222,000 international post-cards, 34,727,000 domestic and 16,025,000 international printed inclosures and packets, and 89,000 domestic and 25,000 international registered letters of the value of 119,201,000 and 31,275,000 francs, respectively. The receipts were 21,803,665 pesetas, expenses 12,274,634 pesetas.

The length of telegraph lines on Jan. 1, 1890, was 24,301 kilometres, or 14,270 miles, with 54,800 kilometres, or 34,250 miles, of wires, not including 8,734 kilometres of lines belonging to railroad companies. The number of internal dispatches was 3,164,796; of international dispatches, 932,848; of dispatches connected with the service, 142,784; the receipts for 1889-'90, 5,298,416 pesetas; expenses, 7,229,755 pesetas.

The New Cortes.—The first Cortes under the Regency, having completed the full term of five years, was dissolved on Dec. 30, 1890, and elections were appointed for Feb. 1, 1892, for the House of Deputies, and for Feb. 15 for Senators in the new Cortes that was to meet on March 2, under the new Government presided over by Canovas del Castillo. The elections were the first that took place under the law of universal suffrage, and were conducted by the Conservative party, which had strenuously opposed the passage of that law. In the elections for Deputies the most remarkable feature was the strength displayed by the Republicans, who elected their candidates by large majorities in five of the great towns, and would have won in Madrid, Barcelona, Saragossa, Sevilla, and Cadiz, in which they were beaten by the Conservatives, if the party had not divided into two factions. In Barcelona, Saragossa, and Valencia they obtained more votes than the Liberals, although workingmen and Socialists largely abstained from voting. The Republican leader, Nicolas Salmeron y Alfonso, candidate in one of the suburbs of Barcelona, was believed by the people to have been elected, and great indignation was caused when Señor Puig, the Conservative candidate, was declared to have received the most votes. The announcement was made on the day after mounted gendarmes had charged without provocation and without warning upon a crowd who were listening to a speech from Señor Salmeron and had fired their carbines, dangerously wounding many people, and apparently aiming at the orator. Fights between Liberals and Carlists occurred in several towns. An unusual number of parties placed separate candidates in the field. Besides the

Liberals, or Liberal-Fusionists, led by Señor Sagasta, and the Conservatives, under the leadership of Señor Canovas, there were the Señor Romero y Robledo's Reform Party, Señor Castelar's Republicans, the Federalists, the Zorillist Republicans, the Martists, the Carlists, and the Socialists. About 288 seats were won by the Conservatives, including 9 in Puerto Rico and 20 in Cuba, where the Autonomists largely abstained from voting. Against the Government were 88 Fusionists, 27 Republicans, 13 Romerists, 10 of the Cuban Opposition, 8 Carlists, 8 Martists, and 2 Puerto Rican Autonomists. Of the Republicans, about two fifths were followers of Salmeron, while the other Republican seats were nearly equally divided among the Zorillists or Revolutionary party, the Possibilists, and the Federalists, with whom the Castelar Republicans united. Of Sagasta's Fusion party about three eighths were Constitutional Liberals, one fourth were Democrats, one fifth were Liberal Conservatives, and one sixth Gamazist Protectionists. The Senatorial elections gave seats to 150 Conservatives, 19 Fusionists, 7 Reformists, 2 followers of Señor Martos, 1 Republican, and 1 Carlist.

The Cortes were opened on March 2 by the Queen in a speech of clear import, promising the continuance of the reform legislation begun by the Fusionist Cabinet, and the completion of the new laws of worship, justice, and civil administration; a protective tariff which would effect an equilibrium of the budget; reforms in the penal code and in the army and navy regulations; an amnesty for political offenders, but without the restitution of military grades; measures for the advantage and protection of the working classes; reforms in the public accounts, in municipal and provincial government, in education, in the regulation of railroads and of mines, and in the patent laws; liberal electoral laws for the West Indies; and a thorough reformation of the finances, including retrenchments sufficient to meet the deficit, new credits only for the augmentation of the navy, the consolidation of the floating debt, and measures to improve the condition of the notes of the Bank of Spain. The continuance of negotiations with France in regard to the frontier in Guinea was announced, as well as the settlement of claims on Morocco. The commercial treaties had been denounced with a view to negotiate new ones that would conform to the protectionist policy, and an understanding with the United States for a new convention was looked for. At the beginning of the session the Prime Minister introduced a bill prohibiting Sunday work in industrial and commercial establishments for minors under the age of eighteen years, and for workmen of all ages in establishments belonging to the state or to municipalities. A bill which engrossed the attention of the public, and was regarded by many as mischievous, proposed to empower the Bank of Spain to increase its issue of notes to 1,500,000,000 pesetas on condition that it should increase its metallic reserve from one fourth to one third of the amount of notes issued, one half to be held in gold and one half in silver, with further power to enlarge its circulation indefinitely, provided that emissions beyond the 1,500,000,000 pesetas be secured by reserves of half their amount in metal. The object of the bill was to enable

the bank to advance money to the Government, which needed 600,000,000 pesetas to pay for railroads, the new fleet, and other pressing requirements. The measure as passed limited the note issue to 1,500,000,000 pesetas, which was double the existing maximum, and extended the bank's charter till 1922; and in return for these concessions the Government received an advance of 150,000,000 pesetas for thirty years without interest, of which 87,000,000 pesetas were to be expended for naval construction in accordance with the law of July, 1888; 15,000,000 pesetas for war material for the army; 35,000,000 pesetas for railroad subventions; and 13,000,000 pesetas on harbor improvements, canals, and other public works. Another law authorized the issue of 250,000,000 pesetas of Government bonds, running thirty years and bearing 4 per cent. interest. The bill granting a general amnesty to political offenders, in fulfillment of the promise in the Queen's speech, gave all refugees and exiles the right to return to Spain, if they availed themselves of the amnesty within the next four months, and restored to army officers their right to a retiring pension, reckoning seniority from the date when they left the service.

Insurrectionary Movements.—Before May 1 strikes and broken out in Bilbao, Cartagena, and other places. On the Socialist labor day excited meetings of working men took place at Madrid and the principal industrial centers. Señor Canovas made a declaration that the eight-hour working day should be secured by international legislation, but that it was not for Spain to take the lead in the matter. On May 1 the ship-yards of Rivas & Palmer were burned in Bilbao, it was supposed by incendiaries, and several disturbances occurred while the strike lasted. At Cadiz and elsewhere there were mysterious explosions of bombs. Masons, tailors, bakers, and members of other trades struck in Barcelona for the eight-hour day in May, but returned to work after a few days. After the closure of the Cortes on July 13, labor disturbances were renewed; and when disastrous floods caused distress throughout southern Spain, menacing demonstrations of working men were organized in the affected provinces.

On Aug. 2 an attempt was made by Federalist Republicans to incite a revolt of the garrison at Barcelona. A band of 15 men, armed with rifles and revolvers, attempted to surprise the sentries and gain entrance into the barracks. On being detected, they made a rush for the entrance, firing their weapons and wounding some of the guards, who answered their fire. After a brief fight the foolhardy revolutionists, who expected the garrison to mutiny at their signal, were overpowered and captured.

Cabinet Crisis.—The financial position of the Government was not strengthened by the devices of Señor Cos-Gayon, and was rendered critical by the decline of Spanish *rentes* in the Paris Bourse, and by disastrous floods which in the autumn swept away the crops in the provinces south of the Ebro. The rice crops in Valencia, the raisin harvest in Malaga, the vintage in Almeria, and the grain and potato crops and the live stock in these provinces and in Murcia, Toledo, and Saragossa, were almost annihilated. The whole town of Consuegra was destroyed by a

torrential inundation on Sept. 11, and some 1,200 persons, more than one quarter of the population, were drowned. Although the Conservative majority outnumbered the followers of Señor Sagasta in the Cortes three to one, Señor Canovas saw the necessity of strengthening the Cabinet, and invited the support of the Reformists, who had expressed entire approval of the objects and methods unfolded in the ministerial programme. Admiral Beranger, in endeavoring to carry out the extensive scheme of naval reform, gave offense to many, and was subjected to attacks in the newspapers which impelled him to resign. The Prime Minister, on Nov. 9, took charge of the Marine Department *ad interim* pending the appointment of a successor of Admiral Beranger. He found the officers of the navy who possessed the necessary capabilities unwilling to accept the post under the circumstances. Señor Silvela had differences with the Prime Minister of long standing, and a reconstruction of the Cabinet was considered expedient by Señor Canovas, who expected to tide over the crisis by a slight modification of the ministerial policy and some exchanges of portfolios. When he found that the Minister of the Interior had sympathizers within the Cabinet, he declared the crisis political at the meeting of Nov. 21, in which Señor Silvela expressed his determination to retire. After a heated discussion, at the suggestion of the Minister of Justice, Señor Villaverde, the members of the Council voted to tender their resignations to the Queen-Regent in a body. A new Cabinet was formed on Nov. 23, in which Señor Romero and his lieutenant, Señor Elduayen office. The Cabinet as finally constituted was took as follows: President of the Council, Antonio Canovas del Castillo; Minister of Foreign Affairs, the Duke of Tetuan; Minister of the Interior, Señor Elduayen, Marquis del Pazo de la Merced; Minister of War, Gen. Azarraga; Minister of Marine, Vice-Admiral Montojo; Minister of Finance, Concha Castañeda; Minister of the Colonies, Señor Romero y Robledo; Minister of Justice, F. Cos-Gayon; Minister of Public Works, Commerce, and Agriculture, Señor Linares Rivas. Señor Canovas sent statements to the Spanish ambassadors and ministers, and to the Governors of provinces, intimating that the foreign policy of the new Cabinet would differ in no way from that of its predecessor, and that its domestic policy would be to realize economies and to foster public liberty as far as was compatible with tranquillity.

The Colonies.—Including the Antilles (see CUBA AND PUERTO RICO), the ultramarine possessions of Spain have an aggregate area of 406,903 square miles, and a population of 9,404,400, according to the most recent estimates. The most important of the colonies, besides the West Indian Islands, is the Philippine Islands, which had in 1887 a population of 6,985,123, including 1,000,000 unsubdued natives. Other possessions in the South Sea are the Sulu, Marianne, and Caroline Islands, with a population of 120,000. In Africa the Spanish occupy a tract of 243,000 square miles in the region of the Rio de Oro and Adrar. They claim a much larger territory there and on the mainland opposite Corisco and Elobey, where the territory actually occupied is confined to those islands and the Cape of San

Juan. The French Government disputed their pretensions, agreeing only to grant commercial freedom on the Muni river, where there are Spanish settlements, and also on the Benito river. As regards the Rio de Oro, the French Government in 1886 agreed to make an equal division of the Cape Blanco peninsula by a line which would extend into the interior along the parallel of $21^{\circ} 20'$. A joint commission for the settlement of these disputes met in Paris in the beginning of 1891. The question of the Rio de Oro territory was at once excluded from the deliberations, because the Spanish commissioners assumed that the dividing line extended indefinitely into the interior, embracing a part of the Algerian *Hinterland*. The commissioners were no better able to reach a common understanding regarding the historical claims of Spain to the large region inclosed by the Muni and Benito rivers, and consequently they separated in the beginning of April after deciding that the questions in dispute should be referred to arbitration. The Spanish authorities have been at war with the natives both of the Philippines and the Caroline Islands. American missionaries interceded in 1890 to save the inhabitants of the Caroline Islands from the cruelty and oppression of Spanish soldiers, and the governor promised to grant protection. Some time afterward the natives rose in rebellion and drove out their oppressors, who were lascars from Manila, not Spaniards. This led to the bombardment of Ponape and other villages and the expulsion of Americans. In the first attempt to land, 40 Spanish soldiers were killed, and in the course of the war about 300 native warriors fell. The budget of receipts in the Philippine Islands for 1890 was \$9,837,896, while the expenses were estimated at \$11,201,810, of which \$5,611,557 were for the army and navy. The Spanish force maintained there numbered 452 soldiers and 2,818 sailors. The imports in 1887 were valued at \$17,530,296, and the exports at \$25,254,140. The chief exports are tobacco, sugar, coffee, and manilla hemp, the exports of the first being valued at \$7,995,726, those of hemp and manufactures of hemp at \$5,460,454, those of tobacco and cigars at \$2,024,767, and those of coffee at \$2,093,518. Other articles of export are dyewoods, indigo, and skins. The number of vessels entered during 1887 was 438, of 359,999 tons, and the number cleared was 435, of 345,350 tons. There is a railroad building to connect Manila with Dagupan, the distance being 120 miles.

SWEDEN AND NORWAY, two kingdoms in the north of Europe united in the person of the sovereign, and having a common diplomacy directed by a Council of State in which both nations have representatives. The reigning King is Oscar II, born Jan. 21, 1829, who succeeded Carl XV, his brother, on Sept. 18, 1872. The heir-apparent is the King's oldest son, Gustaf, Duke of Wermland, born June 16, 1858.

SWEDEN.—The legislative power is vested in a Diet, consisting of two chambers, one of 147 members, elected for nine years by the communes, and the other of 228 members, elected for three years by direct suffrage in towns, and by either direct or indirect suffrage, as the majority decides, in the rural districts. The following ministers were in office in the beginning of 1891:

Johan Gustaf Nils Samuel Akerhjelm, Minister of State; Count Carl Lewenhaupt, Minister of Foreign Affairs; August Ostergren, Minister of Justice; Baron Nils Axel Hjalmar Palmstierna, Minister of War; Baron Carl Gustaf von Otter, Minister of Marine; Victor Lennart Groll, Minister of the Interior; Baron Fredrik von Essen, Minister of Finance; Gunnar Wennerburg, Minister of Education and Ecclesiastical Affairs; Baron Albert Lars Evert Akerhjelm; Sven Herman Wikblad.

Area and Population.—With an area of 170,979 square miles, Sweden has a population, according to the preliminary results of the census of Dec. 31, 1890, of 4,784,675 individuals, of whom 2,317,105 are of the male and 2,467,570 of the female sex. The marriages in 1889 numbered 28,478; births, 135,586; deaths, 70,641; surplus of births, 55,945. The emigrants in 1889 numbered 3,336, and the immigrants 5,504. There are 16,976 Finns, 6,404 Lapps, and about 18,000 Norwegians, Danes, Germans, and other foreigners. The chief cities are Stockholm, having 246,154 inhabitants in 1890; Göteborg, with 104,657; Malmö, with 48,504; and Norrköping, with 32,826. Elementary education is universal. The University of Upsala had 1,791 students and the University of Lund 855 in 1889, and there were 14,062 pupils in the public high schools, 872 in people's high schools, 907 in normal schools, 459 in technical schools, and in 1888 there were 685,212 in the public elementary schools.

Finances.—The budget for 1892 makes the total receipts from the ordinary sources of revenue—that is, from the land tax, personal tax, navigation dues, domains, forests, railroads, telegraphs, etc.—20,490,000 kronor (the Swedish krona or Norwegian krone is worth 27½ cents). The extraordinary receipts were estimated at 68,780,000 kronor, 38,000,000 kronor being set down for customs, 7,700,000 for postal receipts, 3,600,000 for stamps, 13,700,000 for the revenue from the spirit tax, 1,600,000 for receipts of the duties on beets, 3,800,000 for the income tax, and 380,000 for miscellaneous receipts. With a balance of 5,887,000 kronor carried over from the previous year and 1,850,000 kronor earned by the state bank, the total amount available is 97,007,000 kronor. The total expenditure, including 69,101,311 kronor of ordinary expenses, 16,406,389 kronor of extraordinary outlay, 10,495,000 kronor for interest and amortization of the debt, 250,000 kronor reserved for the construction of a hall for the Legislature, 100,000 kronor reserved for a working-men's accident insurance fund, is made to balance the estimate of receipts by carrying 654,900 kronor to floating capital. The ordinary expenditure on the army is 20,670,000 kronor; on the navy, 6,258,690 kronor; extraordinary expenditure on the army and navy, 4,315,910 kronor; expenditure on education and religion, 12,335,282 kronor; pensions, 2,915,550 kronor; cost of administration of the customs, post-office, excise, telegraphs, and forests, 16,340,066 kronor; civil list, 1,320,000 kronor; expenses of the judiciary, 3,854,107 kronor; expenses of diplomatic relations, 606,750 kronor; expenses of the Interior Department, 4,800,866 kronor; extraordinary expenditures, 12,090,470 kronor.

The public debt comprises an internal loan, paying 3-6 per cent. interest, raised in 1887, of

which 18,890,500 kronor were outstanding on Jan. 1, 1891, and 240,622,099 kronor borrowed in Great Britain, France, and Germany, of which 16,665,432 kronor raised in 1878 and 111,978,000 kronor raised in 1880 pay 4 per cent., 49,635,333 kronor remaining from the loan of 1886 and 35,555,556 kronor borrowed in 1890 pay 3½ per cent., and 26,606,667 kronor were raised at 3 per cent. in 1888.

The Army and Navy.—The larger part of the army consists of the *Indelta* or cantoned troops, which are raised and maintained by rural proprietors in virtue of contracts made with them by the Government. During the first year, which usually begins at the age of twenty, the recruits are kept with the colors one hundred and twenty days, except the cavalrymen, who are trained for two hundred and twenty days. In the second year the soldiers are required to exercise seventy-two days, and in the succeeding four years twenty-two days. The life guards, the engineers and train, the artillery, and bodies of hussars and chasseurs consist of enlisted troops, called the *Värfvade*, who are engaged for terms of active service varying from two to six years. Under the conscription law of Jan. 1, 1887, every Swede is enrolled for six years in the *Bevdrung* and six years in the *Landstorm*, and during the first two years is drilled for a total period of forty-two days. The strength of the regular army in 1891 was 2,086 officers, 521 employés, 1,688 under officers, 1,593 musicians, and 33,783 privates, making 39,671 men, with 6,249 horses. The *Bevdrung* numbered 134,717 of all ranks, and the *Landstorm* 159,763, making a total war effective of 394,151 men.

The Swedish navy in 1891 comprised 2 first-class, 4 second-class, and 10 third-class armor-clad gun-vessels, 15 sloop gunboats, 1 small cruiser, 6 first-class and 9 second-class torpedo boats, two school ships, 1 frigate, 3 corvettes, and 3 transports, besides 2 sailing corvettes and 4 brigs. The armament comprised 148 guns and 154 machine guns. The crews numbered 4,295 men. The most powerful ship is the "*Sren*," completed in 1886, a central citadel ironclad of 2,900 tons displacement, plated with 12 inches of armor over the vulnerable parts, and carrying a couple of 32-ton breech-loaders in her turret and 4 6-inch guns on the upper deck.

Commerce.—The total value of imports in 1889 was 376,964,000 kronor, against 324,769,000 kronor in 1888 and 297,410,000 kronor in 1887. The value of the exports was 301,725,000 kronor, against 281,753,000 kronor in 1888 and 246,678,000 kronor in 1887. Of the exports for 1889, the value of 1,448,000 kronor went to the United States. Of the value of the imports, 115,503,000 kronor were from Germany, 110,815,000 kronor from Great Britain, 45,239,000 kronor from Denmark, 34,311,000 kronor from Norway, 20,950,000 kronor from Russia, 12,185,000 kronor from Belgium, 8,960,000 kronor from the Netherlands, 7,636,000 kronor from France, 5,964,000 kronor from the United States, 5,815,000 kronor from Finland, 3,058,000 kronor from eastern Asia, and 6,588,000 kronor from other countries. The imports of articles of consumption were valued at 119,000,000 kronor, including 29,300,000 kronor for cereals, 50,800,000 kronor for colonial goods, 15,800,000 kronor for animals and animal

food products, 9,100,000 kronor for tobacco, 7,400,000 kronor for fermented drinks, 4,000,000 kronor for fruits and legumes, and 2,600,000 kronor for salt. The imports of articles of consumption amounted to 73,900,000 kronor, including 59,100,000 kronor for animals and animal victuals, 11,100,000 kronor for cereals, 2,000,000 kronor for spirits, and 1,700,000 kronor for other things. Imports of raw materials, 88,600,000 kronor in total value, consisted of textile materials for 27,000,000 kronor, coal for 26,200,000 kronor, hides and leather for 13,100,000 kronor, metals for 11,600,000 kronor, minerals for 8,800,000 kronor, and timber for 1,900,000 kronor. The exports of raw materials were 162,900,000 kronor in value, consisting of lumber for 116,700,000 kronor, metals for 40,000,000 kronor, minerals for 4,700,000 kronor, and other articles for 1,500,000 kronor. The imports of manufactured goods, 127,500,000 kronor in value, consisted of textiles for 76,200,000 kronor, ships, machinery, and vehicles for 18,200,000 kronor, metal wares for 15,000,000 kronor, paper for 5,000,000 kronor, and other goods for 13,100,000 kronor. The exports of manufactured products were 59,300,000 kronor in value, the principal items being paper for 17,700,000 kronor, textile manufactures for 7,700,000 kronor, and metal goods for 5,200,000 kronor. The imports of oils, drugs and chemicals, and other miscellaneous merchandise were valued at 41,500,000 kronor, and the exports at 5,500,000 kronor. The import of precious metals was 400,000 kronor and the export 100,000 kronor.

Navigation.—The number of vessels entered at Swedish ports during 1889 was 30,184, of 5,450,000 tons, of which 14,098, of 1,781,000 tons, were Swedish, 2,627, of 529,000 tons, were Norwegian, and 13,459, of 3,140,000 tons, were of other nationalities. Of the total number, 11,484, of 2,389,000 tons, were with cargoes. The number of steamers included in the total was 12,713, of 3,686,000 tons. The total number cleared was 28,027, of 5,181,000 tons, including 12,570 steamers, of 3,644,000 tons; of the total number, 19,164, of 3,888,000 tons, carried cargoes.

The merchant marine on Jan. 1, 1890, numbered 2,859 sailing vessels, of 369,709 tons, and 963 steamers, of 134,970 tons, a total of 3,822 vessels, of 504,679 tons.

Communications.—The Swedish railroads at the end of 1890 had a total length of 8,018 kilometres, of which 2,613 kilometres belonged to the Government and 5,405 kilometres to private companies. The cost of the state railroads up to the end of 1888 was 247,173,027 kronor, and of the private lines 247,842,457 kronor.

The total length of the state telegraph lines in 1890 was 8,785 kilometres, with 22,884 kilometres of wires, including 101 kilometres of submarine cable, but not the cable owned in common with Denmark, nor that running to the island of Rügen, of which the Prussian Government is joint owner. The number of paid messages sent in the internal service was 961,476; international messages, 603,517; in transit, 190,352; official, 65,331; receipts, 1,444,909 kronor; expenses, 1,359,161 kronor.

The number of letters mailed in 1889 was 41,808,000 in the internal service, 11,469,000 international, and 244,030 in transit; the number of

postal cards, 4,642,000 internal and 7,110,000 international; printed inclosures, 2,456,000 internal and 2,718,000 international; registered letters, 1,575,000 internal, with 604,396,000 francs, and 199 international, with 49,275,000 francs.

NORWAY.—The legislative body is the Storting, composed of 114 representatives, 38 from towns and 76 from rural constituencies, elected for three years by the suffrage of chosen electors. It meets every year for two months in February, and elects one fourth of its members to form the Lagthing, which approves or rejects the projects of law that have first passed the Odelsting, consisting of the other three fourths of the Storting. If the Lagthing withholds its assent to a measure, the two Houses meet in joint session and a two-thirds vote is necessary to make the bill a law. The Council of State in the beginning of 1891 was composed of the following members: Minister of State, Emil Stang; Education and Ecclesiastical Affairs, Jakob Aall Bonnevie; Justice, Ulrik Christian Arneberg; Interior, Ole Andreas Furu; Public Works, Peter Birch-Reichenwald; Finance and Customs, Evald Rygh; Defense, Col. Edvard Hans Hoff; Revision of Public Accounts, Emil Stang; Delegation at Stockholm, Gregers Winther Wulfsberg Gram, Ferdinand Nicolai Roll, and Johan Heinrich Paasche Thorne.

Area and Population.—The area of Norway is 123,205 square miles. The population, according to the provisional returns of the census of Jan. 1, 1891, is 1,988,997, consisting of 1,037,501 males and 1,988,997 females. The urban population is 463,957, and the rural population 1,525,040. The number of marriages in 1889 was 12,416; of births, 59,188; of deaths, 34,704; excess of births, 24,484. Christiania, the capital, had 148,319 inhabitants present at the census of 1891; Bergen had 52,756; Trondhjem, 24,746; Stavanger, 22,478. The number of emigrants in 1890 was 10,991, against 12,642 in 1889.

Finances.—The ordinary receipts in the year ending June 30, 1891, were 49,804,900 kronor, of which 23,353,500 kronor were derived from customs, 3,041,800 kronor from the spirit duty, 2,104,300 kronor from the malt duty, 7,487,900 kronor from railroads, 1,498,900 kronor from domains, forests, and mines, 2,693,700 kronor from the post-office, 1,071,200 kronor from telegraphs, 1,971,600 kronor from capital, and the rest from succession duties, courts of justice, the university, stamps, etc. The total expenditures amounted to 45,398,200 kronor, the chief items being 9,283,200 kronor for public works, 8,107,100 kronor for financial administration and the debt, 7,424,200 kronor for the army, 5,811,200 kronor for the Interior Department, including the expenses of the post-office and telegraphs, 4,535,800 kronor for justice, police, and sanitary supervision, and 4,373,100 kronor for education. The debt, which was contracted for reproductive works, amounted on June 30, 1890, to 115,357,500 kronor, and was offset by the value of the railroads and other quick assets reckoned at 139,312,900 kronor.

Commerce.—The total value of the imports in 1890 was 208,659,000 kronor, against 191,608,000 kronor in 1889, and 158,397,000 kronor in 1888. The total exports were valued at 131,096,000 kronor, against 132,669,000 kronor in 1889 and 122,357,000 kronor in 1888. Of the im-

ports, Great Britain furnished the value of 66,128,000 kroner; Germany, 54,985,000 kroner; Sweden, 23,125,000 kroner; Russia and Finland, 20,726,000 kroner; Denmark, 9,378,000 kroner; the United States, 9,203,000 kroner; the Netherlands, 8,054,000 kroner; Belgium, 6,520,000 kroner; France, 5,833,000 kroner; and other countries, 4,706,000 kroner. Of the total exports, 42,250,000 kroner went to Great Britain, 19,631,000 kroner to Sweden, 18,227,000 kroner to Germany, 11,974,000 kroner to Spain, 7,087,000 kroner to France, 6,223,000 kroner to Holland, 5,329,000 kroner to Belgium, 5,300,000 kroner to Denmark, 4,372,000 kroner to Italy, 3,095,000 kroner to Russia and Finland, 2,094,000 kroner to the United States, and 5,518,000 kroner to other countries. The imports of articles of food and drink amounted to 79,000,000 kroner, the principal items being 33,600,000 kroner for cereals, 23,200,000 kroner for colonial products, 15,600,000 kroner for animals and animal products, and 3,800,000 kroner for fermented liquors. The exports in the same class amounted to 49,300,000 kroner, of which 46,300,000 kroner represent animal products. The imports of raw materials of the total value of 42,300,000 kroner were coal of the value of 11,500,000 kroner, metals next of the value of 8,100,000 kroner, then textile materials for 7,700,000 kroner, and after these hides and leather for 6,600,000 kroner, minerals for 4,600,000 kroner, and lumber for 3,800,000 kroner. Lumber constitutes 76 per cent. of the exports of raw materials, 31,000,000 out of a total value of 44,000,000 kroner, hides and skins of the value of 7,900,000 kroner coming next, and then mineral substances of the value of 3,200,000 kroner. The imports of manufactured goods of the total value of 45,700,000 kroner include textile fabrics to the amount of 30,200,000 kroner, metal wares for 7,900,000 kroner, and manufactures of wood, paper, and leather of the value of 5,600,000 kroner. The imports of miscellaneous merchandise amounted to 43,700,000 kroner, and the exports to 12,900,000 kroner, including oil of the value of 7,600,000 kroner.

Navigation.—The number of vessels entered at ports of Norway in 1889 was 13,064, of 2,705,293 tons, of which 7,229, of 1,719,083 tons were Norwegian. There were cleared 12,854 in all, of 2,629,177 tons, and of these, 7,027, of 1,649,168 tons, were Norwegian. Of the ships entered, 5,845, of 1,572,814 tons, were with cargoes, and 7,219, of 1,132,479 tons, in ballast; and of those cleared, 11,728, of 2,223,596 tons, were with cargoes, and 1,126, of 405,581 tons, in ballast.

The merchant navy on Jan. 1, 1890, consisted of 7,285 ships, of 1,611,398 tons, as compared with 7,233, of 1,534,540 tons, in 1889. The steam fleet numbered 592 vessels in 1889, of 168,081 tons, not counting the vessels of the Government.

Communications.—The railroads in 1891 had a total length of 1,562 kilometres. The Government lines of telegraph had a length in 1890 of 7,585 kilometres, with 14,530 kilometres of wire, and the telegraphs belonging to railroads had a length of 1,585 kilometres, with 2,645 kilometres of wire. There were sent in that year 930,005 internal, 523,927 international, and 8,392 official dispatches. The receipts were 1,095,521 kroner and the expenses 1,149,280.

The number of domestic letters that went through the post-office during 1890 was 19,841,000, besides 1,488,400 registered money letters, and the number of printed inclosures was 23,411,400. The number of foreign letters was 7,407,400; of registered letters, 86,900; of newspapers, etc., 1,080,900. The postal receipts were 2,818,575 kroner, and the expenses 2,615,684.

The Army and Navy.—Military service is obligatory by law, and the period, beginning at the age of twenty-three, is thirteen years, viz.: five in the active army, four in the *Landwehr*, and four in the *Landsturm*. Actual service is restricted to a course of instruction in the first year lasting forty-two days for the infantry and fortress artillery, fifty days for the engineers, and seventy days for the cavalry and field artillery, which is followed by twelve days of exercises with the first class of the *Landwehr*, and to twenty-four days of training in each of the two succeeding years. The effective of the active army is about 12,000 men, and in case of war it may be raised to 800 officers and 18,000 men; but this number must not be exceeded without the consent of the Storting. The military efficiency of the Norwegians has been improved by more careful instruction and voluntary practice in recent years.

The naval forces consist of 4 monitors carrying eight cannons, a deck-protected corvette armed with 16 guns, a smaller corvette armed with 12 guns, 3 large gunboats, 11 of the intermediate class, 17 small ones, and 9 torpedo boats, making 48 steamers mounting 82 cannons, besides 88 machine guns.

Political Crisis.—On Feb. 23, 1891, M. Berner, a member of the Liberal Opposition, proposed in the Storting a resolution demanding greater independence for Norway in diplomatic relations. The Government opposed the resolution, but by a coalition of a part of the Moderate Liberals with the Radicals it was carried by 59 votes against 55. This motion gave expression to one of the principal demands of the Norwegian people, for which Björnstjerne Björnson and other champions of Norwegian liberty and progress have agitated for years, and which has been upheld by the vote of the people, but delayed and defeated through the timidity and vacillation of politicians. The advocates of this and the other demands of the Radical party, which came into power when Johan Sverdrup was made Prime Minister in June, 1884, are believers in popular sovereignty, many of them are avowed Republicans, and the reforms called for by the Norwegian people, which would give proper weight to their interests in international relations, excited such antagonism in Sweden and among the Monarchists and friends of the Union in Norway, who regarded them as a preliminary step that would eventually lead to the dissolution of the Union and the proclamation of a republic, that the Moderate Liberals obtained the upper hand in the Sverdrup government. This caused a split in the Liberal party, which resulted in the formation of a ministry on July 12, 1889, by Emil Stang, leader of the Constitutional or Conservative party, who has been supported by the Moderate Liberals in keeping back the question of independent consular and diplomatic representation, which threatened to

bring on a collision with the crown. The Radical party in Sweden has sympathized with the Norwegians in this matter. All diplomatic intercourse is conducted by the Swedish Minister of Foreign Affairs, who is expected to consult the delegation at Stockholm of the Norwegian Council. Nearly all diplomatic posts abroad, and even the consulships, are filled by Swedes. The first demand of the Norwegians, that they should be represented more equally in the consular service because their commercial relations are more extended and their mercantile navy three times as large as that of Sweden, was disregarded. The officials at Stockholm held that Norwegians are generally unfitted by their political associations and lack of training to represent the Government abroad with dignity and efficiency. Minister Stang arranged a compromise with the Swedish Government, which promised at last to give Norwegians a larger proportion of the offices. When defeated on this question by a majority of 4 in a full Storting, he resigned. The King, on his advice, sent for the mover of the resolution, but M. Berner declined, recommending that either the question should be deferred a little longer by the formation of a cabinet of affairs, or that M. Steen, rector of the gymnasium at Stavanger, who is the leader of the Pure Left, should be intrusted with the management of the business. The latter course was adopted on the advice of the retiring ministers. M. Steen accepted the task of forming a ministry, with the understanding that proposals for the modification of the Act of Union of 1814, and other important reforms, should not be brought forward until it could be seen by the results of the general election in December, 1891, whether the country approved the Radical programme. He completed the list on March 4, refusing to admit any representatives of the Moderate Liberals, although he would be obliged to depend on their votes for the conduct of all public business, for they numbered 23 in the Storting, and the Pure Left 38, while the Conservatives held 53 seats. The portfolios were assigned as follows: J. C. W. Steen, Minister of State and Chief of the Department of Finance and Customs; H. H. T. Nyom, Chief of the Department of Public Works and of that of Revision of Accounts *ad interim*; V. A. Wexelsen, Worship and Public Instruction; O. A. Qvam, Justice and Police; Lieut.-Col. O. F. Holst, National Defense; W. Konow, Interior; Minister of State at Stockholm, O. A. Blehr; Councilors in the section sitting at Stockholm, C. Berner and J. O. Lange.

The Radical or National party, which was strengthened by the preliminary elections during the year, added to its programme the question of extension of the suffrage, which has been opposed by the hitherto dominant Agrarian party. When the elections were concluded the Radicals had gained the absolute majority.

Congress on the Punishment of Crime.—The third congress of the International Association for the Consideration of Questions relating to Crimes and Criminals was held in Christiania in August. It passed a resolution recommending the imposition of money fines in many cases as a substitute for imprisonment or more violent penalties. It was recommended further that, in

assessing the fines, courts should adjust them to the pecuniary means of offenders, fixing the maximum very high and the minimum low; that the fines should be made payable in installments, if the prisoners were unable to pay them at once; and that, when sentenced to imprisonment, a prisoner should have the option of paying a fine as a means of reducing the term. The congress disapproved the proposition to convert sentences into imprisonment in cases where criminals were too poor to pay their fines.

SWITZERLAND, a federal republic in central Europe. The perpetual neutrality of Switzerland and the integrity and inviolability of her territory were guaranteed by Austria, Great Britain, Portugal, Prussia, and Russia in November, 1815. The Constitution adopted after the war of the Sonderbund in 1848 created two legislative chambers—the National Assembly, representing the Swiss people as a whole, and the Council of States, representing the cantons—and vested the executive authority in a Federal Council of 7 members. Switzerland thus was transformed from a league of republics into a federal republic; and a further centralization was brought about by the unification of the army and the laws when the Constitution was revised in 1874. The Council of States, or Ständerath, has two members from each of the 22 cantons, each independent part of the divided cantons of Basel, Appenzell, and Unterwald sending 1 member. The Nationalrath, or National Council, contains 147 representatives of the nation, chosen by universal suffrage in the proportion of 1 to every 20,000 inhabitants. Although the two bodies have equal and concurrent powers, the popular body has come to be the more important. Sitting together, the two chambers form the United Federal Assembly, which elects the Federal Council and the Federal Tribunal. In debate each representative uses his own language, German, French, or Italian. In 1891 a bill was passed ordering official reports of the legislative proceedings to be printed in the future. The Federal Council is elected by the Federal Assembly or Bundesversammlung for three years. No two men from one canton can be members of the same Council, and when Deputies are elected their seats in the chambers become vacant. The attributes of the Council are to enforce the provisions of the Federal Constitution, to execute the acts of the Assembly and of the Tribunal, to administer the finances, to examine laws passed by the cantonal governments and to settle disputes arising between them, and see that they fulfill their obligations toward the Confederation. Except in foreign affairs their duties are chiefly ministerial, yet in shaping legislation they exercise great influence both individually and as a body. Each member of the Council presides over one of the executive departments. The president of the Confederation is one of the members of the Council, who is elected by his colleagues for one year to the position, which is now simply titular, for it no longer gives the incumbent the charge of the most important department of the Government.

The communes of Switzerland preserve in a large degree their ancient autonomy. The Federal Constitution is a counterpart of the main features of the political organization of the indi-

vidual cantons, which possess a degree of sovereignty equal to that of the American States, having complete control and legislative power regarding personal rights, land laws, administration of criminal justice, the cantonal and communal police, organization of communes, public works, and elementary education.

The Federal Council for 1890-'92 is composed of the following members: President of the Confederation for 1891, Dr. E. Welti, of Aargau, chief of the Department of Posts and Railroads; Vice-President for 1891, W. Hauser, of Zürich, chief of the Department of Finance and Customs; Dr. K. Schenk, of Bern, chief of the Department of the Interior; L. Ruchonnet, of Vaud, chief of the Department of Justice and Police; Dr. N. Droz, of Neuchâtel, chief of the Department of Foreign Affairs; Dr. A. Deucher, of Thurgau, chief of the Department of Industry and Agriculture; Col. E. Frey, of the rural division of Basel, chief of the Department of Military Affairs. Dr. Welti retired from the Bundesrath in December, 1891, and in his place was chosen Dr. Zemp, of Luzern, the first member of the Conservative Ultramontane party who had ever been President of the National Council and the first to enter the Federal Council.

Area and Population.—The area of Switzerland is 41,346 square kilometres, or 15,892 square miles. The domiciled population, as ascertained by the census of Dec. 31, 1888, was 2,917,754, and the population present was 2,933,334, showing an increase of 0.375 per cent. per annum since the census of 1880. According to the preliminary returns regarding sex there were 1,427,057 males and 1,506,277 females. The number of Swiss in the resident population was 2,688,104; the number of foreigners was 229,650, of whom 112,342 were Germans, 58,627 French, 41,881 Italians, 14,181 Austrians and Hungarians, 3,577 British, 1,354 Russians, 2,153 from other European countries, 1,019 North Americans, and 516 from other countries. In religion, 1,716,548, or 58.8 per cent. of the population, were Protestants; 1,183,828, or 40.6 per cent., were Catholics; 8,069 were Jews; and 9,309 were of other beliefs. In regard to language, 2,083,097 spoke German, 634,613 French, 155,130 Italian, 38,357 Romansch, and 6,557 other tongues. The Italian and Romansch languages are losing ground gradually, and the French-speaking population is increasing at the expense of the German, through the assimilation of the German-Swiss element. The number of marriages in 1890 was 20,836; births, 81,620; deaths, 64,877; natural increase of population, 16,743. The transmarine emigration in 1890 was 7,712, of which number 6,917 were destined for North America, 752 for South America, and 43 for other parts of the world. The population of the chief cities in 1888 was as follows: Zürich, 90,088; Geneva, 71,807; Basel, 69,809; Bern, the seat of the Federal Government, 46,009; Lausanne, the seat of the Federal Tribunal, 33,340; St. Gallen, 27,390; La Chaux-de-Fonds, 25,603. Education is compulsory and almost universal in the Protestant cantons. Only 0.11 per cent. of the recruits for the army were found illiterate in 1888. The students in the universities of Bern, Zürich, Basel, and Geneva, and the academies of Lausanne and Neuchâtel, numbered 2,412 in 1890, of

whom 630 were foreigners and 196 were females, and at the National Polytechnic School there were 970 studying in 1888. There were 461,622 children and 245,525 adults receiving instruction in the elementary schools in 1886, and 136,552 pupils in the work schools for girls.

Finances.—The receipts of the Federal Government for 1890 were 73,153,889 francs, of which 31,258,296 francs were from customs, 24,180,020 francs from the post-office, 4,309,938 francs from telegraphs and telephones, 8,499,796 from the military arsenals, workshops, and army-exemption tax, 1,317,837 francs from invested capital, and small sums from other sources. The total expenditure was 72,221,019 francs, of which 27,111,079 francs were for the army, 21,908,658 francs for the post-office, 3,266,884 francs for the telegraph service, 6,449,952 francs for administering the finances and customs, 7,391,041 francs for the Interior Department, 2,652,373 francs for the public debt, and smaller amounts for other purposes.

The Federal debt on Jan. 1, 1891, amounted to 58,412,452 francs, against which the Government could show general assets amounting to 92,625,710 francs and 14,500,667 francs held in special funds.

Commerce.—The value of the special imports in 1890 was 953,395,000 francs, of which 295,140,000 francs came from Germany, 226,341,000 francs from France, 129,015,000 francs from Italy, 102,320,000 francs from Austria-Hungary, 52,374,000 francs from Great Britain; 33,292,000 francs from Russia, 31,838,000 francs from Belgium, 28,734,000 francs from the United States, 14,946,000 francs from Africa, 8,894,000 francs from Holland, 15,210,000 francs from other European countries, 7,076,000 francs from other countries of America besides the United States, 7,076,000 francs from Asia, and 1,964,000 francs from Australia and Polynesia. The total value of the exports was 703,540,000 francs, of which 181,873,000 francs represent the exports to Germany, 123,929,000 francs went to France, 106,489,000 francs to Great Britain, 82,676,000 francs to the United States, 50,370,000 francs to Italy, 39,259,000 francs to Austria-Hungary, 13,686,000 francs to Russia in Europe and Asia, 12,348,000 francs to Belgium, 4,834,000 francs to Holland. The total imports of grain and flour were 101,014,000 francs in value; spun silk, 73,509,000 francs; raw silk, 53,779,000 francs; animals, 61,006,000 francs; cotton, 43,562,000 francs; woolen thread and cloth, 43,031,000 francs; wine, 34,595,000 francs; coal, 34,210,000 francs; cottons, 27,526,000 francs; apparel, 27,050,000 francs; iron, 26,418,000 francs; machinery and carriages, 20,462,000 francs; chemicals, 20,035,000 francs; sugar, 19,653,000 francs; coffee, 19,239,000 francs; iron and steel goods, 16,617,000 francs; silk manufactures, 13,953,000 francs; raw wool, 13,851,000 francs; timber, 12,899,000 francs; leather, 11,414,000 francs; manufactures of leather, 10,197,000 francs. The chief exports in 1890 were cotton goods of the value of 135,765,000 francs; silk, manufactures, 121,031,000 francs; watches, 104,067,000 francs; silk thread, 65,948,000 francs; cheese, 38,207,000 francs; machinery and carriages, 23,882,000 francs; cotton, 22,397,000 francs; animals, 16,236,000 francs; raw silk, 12,-

312,000 francs; milk, 13,449,000 francs; coloring matters, 10,921,000 francs; wool, 10,637,000 francs; apparel, 10,606,000 francs; hides and skins, 7,874,000 francs. Of the exports, 14·8 per cent. were pastoral and 85·2 per cent. industrial products, while of the imports 33·1 per cent. were agricultural, 20·1 per cent. pastoral, 1·9 per cent. forestry, 8·7 per cent. mining, and 36·2 per cent. industrial products.

Railroads.—The Swiss railroads on July 1, 1890, had a total length of 3,156 kilometres, including the St. Gothard line. They were owned by about 15 companies, with the exception of the Jura and Luzern line, passing through Bern, which belongs to the canton of Bern. The cost of construction up to the end of 1889 was 929,309,727 francs. The receipts for 1888 were 82,283,477 francs, and the expenses 43,850,883 francs. The Federal Government adopted the policy of obtaining possession of the railroads, and made terms for the purchase of the Swiss Central line, which were approved by the Assembly but rejected by the people in December, 1891.

Posts and Telegraphs.—The post-office in 1890 forwarded 76,497,000 domestic and 33,693,000 international letters, and 20,292,000 domestic and 15,259,000 foreign circulars, and transmitted in 3,019,000 domestic postal orders 345,416,000 francs, and in 682,000 foreign orders 39,972,000 francs.

The state telegraph lines had in 1890 a total length of 7,200 kilometres, with 18,238 kilometres of wire. The number of dispatches for the year was 3,824,040, of which 1,965,862 were internal, 1,219,653 international, 510,473 in transit, and 128,052 connected with the service. The receipts were 4,309,933 francs, and the expenses 3,909,859 francs.

The Army.—Every Swiss citizen, whether he resides at home or abroad, must perform military service or pay an exemption tax. The battalions are always kept up to their full strength, and progress is made constantly in order to enable the republic to defend at need its neutrality. The *Auszug*, or regular army, numbered 1,238 staff and furloughed officers, 1,826 sanitary troops, 1,190 administrative troops, 106 battalions of infantry numbering 97,721 officers and men, 48 squadrons of cavalry and 12 companies of scouts numbering 3,004 officers and men, 60 batteries of artillery numbering, with train, park, and artillery of position, 18,032 officers and men, and 24 companies of engineers numbering 4,962 officers and men, making in all 127,973 men. The *Landwehr* is organized likewise in 106 battalions and 24 squadrons, and duplicates the formations of mountain and fortress artillery, park, train, and engineers, but has only 8 instead of 48 field batteries. The numerical strength is returned as 80,272 men, making a war effective of 208,245, not counting the newly organized *Landsturm*, which is estimated at 300,000 men.

The Referendum and Legislative Initiative.—The *referendum*, as established in Switzerland, is the reference to the whole body of voters, whether of the Confederation or of one of the cantons, of enactments of their legislative bodies for their acceptance or rejection. The *referendum* is either compulsory or optional. It is compulsory where the Constitution of a canton requires that the legislative work of the Grand

Council shall be submitted to the people for ratification. In other cantons a certain number of electors can demand that an act of the cantonal Legislature shall be voted on by the whole electorate, and on receiving their petition the cantonal Government must lay it before the people. Optional *referendum* was established for the Confederation in 1848 in regard to revisions of the Constitution, and in 1874 it was extended to other legislation. The Federal Chambers may call for a popular vote on any measure that they have passed, and a measure must be submitted to the people for confirmation or nullification when 30,000 citizens sign a call for the *referendum*. A large proportion of the important bills passed by the Chambers in recent years have been vetoed by the people. In some instances the motives for defeating the measures of the Federal Assembly are not found solely in the provisions of the bill that is attacked. The Ultramontanes, who represent the bulk of the Roman Catholics, constituting 40 per cent. of the entire population, are interested in discrediting and upsetting the acts of the Assembly because the Radical majority has persistently disregarded their protests and pursued an aggressive policy toward the Church. The Protestant Conservatives, who have also felt the effects of the policy of secularization, have been the allies of the Catholic clericals. The Radicals, although still in the majority, are less powerful than formerly. They have been compelled to make peace with the Church by undoing some acts committed by the Government during the heat of the religious struggle. The religious question has given way to social and political movements, and the young democracy, constituting the Extreme Left of the Chamber, are attracting many Radicals into their ranks. Their platform is that of social reform, and they are in favor of direct legislation by the people. The Liberal Conservatives, representing the capitalist class, form a small group in the Chamber, though their power is felt in the country. The young Democrats have been inclined to form an alliance with the Ultramontanes. The latest demand of the latter is that they should be represented in the Federal Council, in which they have never held a seat, notwithstanding their numerical strength in the Assembly. The Catholic cantons took the lead in demanding the *referendum* for a bill granting retiring pensions to employés in the post-office and other branches of the civil service. The young Democrats joined in opposing the bill, which was annulled in the beginning of April, 1891, by the crushing popular majority of 352,000 to 94,000 votes. The blow was the more severe for the men now in power because the opposition was not directed against the principle of the civil pensions, but against provisions of the bill giving the authorities discretionary power to grant or withhold them. Many Swiss statesmen are in favor of introducing the compulsory *referendum* at once as a simpler and less troublesome procedure, since the optional *referendum* has come to be so frequently exercised.

On July 5, 1891, the Swiss people by a general vote carried the principle of direct democratic government still further by adopting a constitutional amendment establishing the popular initia-

tive in legislation on constitutional subjects. The principle of initiating proposals had already been introduced in several of the cantons. Under the new law, when 50,000 citizens unite in the demand, the Chambers must take up any legislative proposals and frame a bill on the subject; or, if the bill is formulated and presented in the call, the Chambers are compelled to accept it and place it before the people for their agreement or disapproval. The amendment was supported by the Ultramontanes and Democrats and by the Liberals of Neuchâtel and Geneva and the Conservative Protestants. The clerical parties hope to arrest the prevailing tendency toward centralization by means of it, and even to force the repeal of certain laws obnoxious to their religious and political convictions. The young Democrats, who are strong centralists, expect to reach their goal more rapidly through the popular initiative, and to effect their cherished social reforms through its instrumentality. The popular vote on the amendment was 169,142 in favor of the people's right to take the initiative in demanding a revision of the provisions of the Constitution to 117,338 against it, a majority in the negative being recorded in only four cantons.

The Ticino Revolt.—When the Radicals of the canton of Ticino, in 1890, overthrew by force the Ultramontane government of the canton, took possession of the palace, and established a provisional government, the Federal authorities sent a commissioner and two battalions of infantry to restore order, but did not use their powers to immediately reinstate the constitutional government. The revolutionists agreed to accept the decision of the majority in the popular elections. The Radicals abstained from voting, and the Constitutional Assembly, which met in January, 1891, was composed entirely of Conservatives. The Constitution was amended in the interest of the Ultramontanes, and on March 8 the people voted on the revised Constitution, which was approved by a majority of only 350 out of 21,000 votes. In July, 21 persons who had taken part in the revolt were tried before a jury in Zürich, the venue having been transferred to that place on account of the excited state of feeling in Ticino. All the accused were acquitted. The trial of Castioni on the charge of having shot State Councilor Rossi ended in his condemnation *in contumaciam* to eight years of hard labor and deprivation of civil rights, as he failed to appear, having fled to England. In September the cantonal government decided to grant an amnesty to the other persons connected with the revolt.

Commercial Treaty with Germany.—A treaty of commerce was concluded with Germany at Vienna on Dec. 10, 1891, which enters into force on Feb. 1, 1892, and expires on Dec. 31, 1903, and from year to year thereafter by tacit consent. Each Government guarantees to the citizens of the other every advantage, privilege, or reduction granted to the citizens of any other country, and will not apply any prohibition or restriction of imports or exports that is not enforced against all other nations, nor in any case forbid the export of grain, cattle, or fuel. Conventional duties are fixed for long lists of articles of German and of Swiss origin or manufacture, and on these no transit duties may be

levied. Articles sent from one country to fairs and markets in the other, samples, empty sacks and barrels, and unsold cattle sent to markets across the frontier, or cattle fattened or pastured in the customs territory of the other contracting party, pay no duty, if they are returned to the country of their origin. Partly manufactured goods and materials, when sent from one country to the other for the completion of the manufacture or for finishing or improving processes, are subject to no duty when returned in the completed or improved form. Thus, textile goods and yarns exported for the purpose of being washed, bleached, colored, printed, etc., the materials for embroideries, laces, trimmings, etc., silk for dyeing, leather and pelts for the manufacture of leather goods and furs, articles sent to be painted, varnished, or polished, and all articles the essential character and names of which are not altered by the improving process, are free from duty both ways. Imports from either country must not be subjected to local or internal taxes higher than are imposed on domestic products of the same nature. Merchants and manufacturers of either country, and their traveling agents, shall be free to circulate and to solicit orders.

Congress on Accident to Workmen.—An International Congress on Accidents to Workmen was held in Bern, in September, 1891. Germany, Great Britain, Austria, Belgium, the United States, Italy, the Netherlands, Russia, Spain, Sweden and Norway, and Switzerland, were represented by more than 300 delegates, many of whom were officials and representatives of their Governments, although the congress had no official character. Labor experts and delegates of employers' associations were present, but working-men's associations were not represented. The first congress of the kind met in Paris in 1889. This was the second one, and a resolution was passed to appoint a permanent committee and hold meetings at intervals of two or three years. The congress lasted a week, and ended on Sept. 26, with the passing of a general resolution to the following effect:

1. The congress and its executive shall in future be called "The Congress and Permanent Committee concerning Accidents to Workmen, and Social Insurance."

2. It is the imperative duty of our time to guard against accidents to workmen and illnesses incidental to particular occupations by adopting the necessary preventive measures, and to compensate those suffering from such accidents and illnesses. In giving effect to these preventive measures, private initiative should co-operate with the action of trade associations and of the state. The indemnification of sufferers should be secured by means of insurance, and it is expedient that insurance against slight accidents and insurance against sickness should go together. In countries where insurance against infirmity and old age exists, it is advantageous to combine therewith insurance against serious accidents and illnesses arising from unhealthy occupations.

3. The congress deems it desirable that governments should, in a systematic manner, institute inquiries concerning accidents to workmen; and it instructs the permanent committee to draft a scheme for the preparation of an international statistical report, and to submit recommendations on the subject to the next congress, to be held, at the earliest, two years, at the latest four years, hence, the time and place of meeting to be fixed by the permanent committee.

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TEMPERANCE INSTRUCTION IN PUBLIC SCHOOLS. Scientific temperance instruction in the United States has had a remarkable history, of which the outlines are given in the following passages from the Report of 1890 by Mrs. Mary H. Hunt, Superintendent of the work in the National and World's Woman's Christian Temperance Union:

Twelve years ago this department was created. Scientific temperance instruction in the public schools was then only an idea. People said, "It is a good thing, and ought to be done if it is possible." Scientific temperance instruction is required by the legislatures of thirty-five States—in fact, by every State in the republic save nine, in all the Territories, and in every school under the control of our national Government. Twelve years ago there was here and there a little sporadic temperance teaching by order of local school boards. To-day it is not a question of option with school boards. There are between 12,000,000 and 13,000,000 children of whom the law says they shall be taught the truth against strong drink and kindred narcotics. Twelve years ago there was no adequate well-graded school literature on this topic. To-day there is as large a variety of good school text-books on physiological or scientific temperance, issued by as many different publishers, as there are good school text-books on any other subject; and these books are as well graded to the capacities of all classes of pupils as are the best modern school readers. Twelve years ago there was no plan for a course of study in this branch. To-day we have schedules of as carefully graded courses of study for this as for any other science. Twelve years ago there was nothing like a uniform idea of what should constitute a faithful pursuit of this branch. To-day we have an established standard, signed by many of the most eminent educators in the land, as to what constitutes an honest pursuit of this study by all pupils in all schools as the law demands. Twelve years ago the Department of Scientific Temperance Instruction consisted of the National Superintendent and Mrs. C. C. Alford, secretary, and that was all. To-day it has a State or Territorial Superintendent pushing its interests in every State and Territory of the land, with county superintendents in every county in some States, with local superintendents in cities, towns, villages, hamlets, and, in some instances, in every school district in a county; and plans are being rapidly executed for completing the appointment of these for every school district in the land.

Mrs. Hunt, the person destined to lead this movement, was born in Canaan, Conn. Her father, Ephraim Hanchett, was a vice-president of the first temperance society in America. She was graduated at Patapsco Female Institute, Md., to which institution she returned as Professor of Natural Sciences. Her marriage to a Massachusetts manufacturer led to her residence in that State. In giving practical oversight to the scientific education of her son, a student in the Massachusetts Institute of Technology, Boston, from 1872 to 1876, Mrs. Hunt was led from the study of alcohol as a chemical reagent to an investigation as to its origin, nature, and effects upon the human system. She became a close student of the original investigations of Dr. B. W. Richardson, London, England, and the findings of others on all sides of the question. Convinced that popular misapprehension as to the

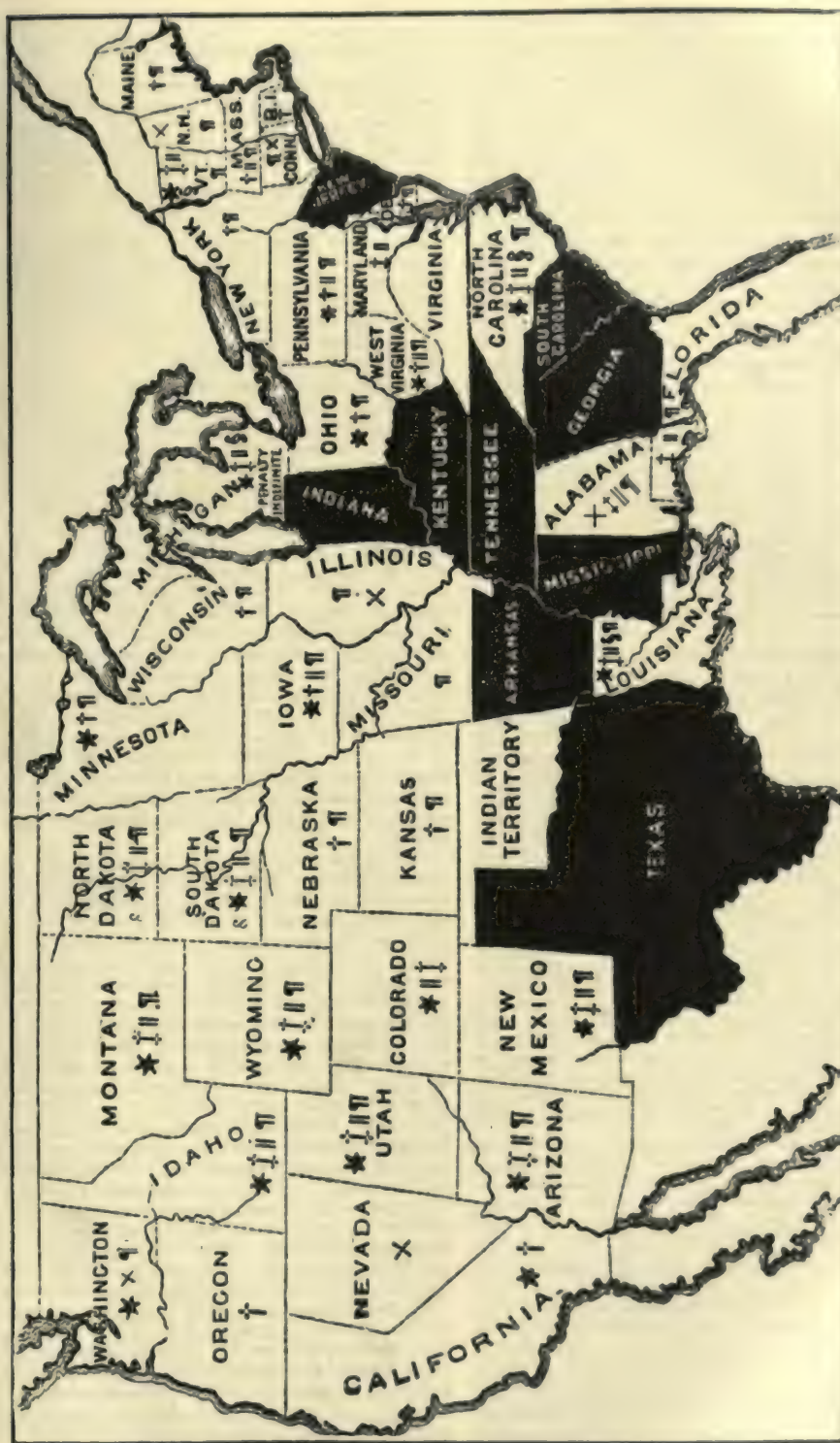
dangerous character of alcohol in small quantities, and ignorance of the fact that a little has the power to create an uncontrollable appetite for more, Mrs. Hunt came to the conclusion that universal early education on the subject before appetite is formed would solve the problem; and that, to be permanent as well as universal, such education should be a part of the public-school system of the country. Her first writings on the subject were a series of papers entitled "The School-house to decide the Temperance Question," published in the "New England Journal of Education," and subsequently circulated in pamphlet form. In 1878 the local School Board of Hyde Park, Mass. (her place of residence), formally adopted the study as a regular branch—the first instance of this kind, as far as known. In 1879 she presented her scheme of the study of physiological temperance in the public schools to the Woman's Christian Temperance Union, at its national convention at Indianapolis. In 1880 that society, responding to her request, created the Department of Scientific Temperance in Public Schools, making her its superintendent, and Mrs. C. C. Alford, of Brooklyn, N. Y., its secretary.

The first two years were given to organizing the department, with State, Territorial, county, and local superintendents; to agitation through the press and from the platform. Before attempting to secure legislation, Mrs. Hunt, foreseeing the need of some concise official answer to the objection that "medical science is not agreed on that topic," went before the American Medical Association, at their annual meeting in June, 1882, and asked for an expression as to the nature and effects of alcoholic drinks. In response they passed a series of resolutions, declaring:

1. We believe alcohol should be classed with other powerful drugs.
2. We are of the opinion that the use of alcoholic liquors as a beverage is productive of a large amount of physical and mental disease; that it entails diseased appetites and enfeebled constitutions upon offspring; and that it is the cause of a large percentage of the crime and pauperism in our cities and country.
3. We would welcome any change in public sentiment that would confine the use of liquors to the uses of science, art, and medicine.

Armed with this declaration, she began her legislative work. In October, 1882, she presented her first temperance educational bill to the Legislature of Vermont. Her thorough canvass of the State just prior to the meeting of the Legislature had roused the people in its behalf, and the bill passed with little or no opposition. It provided that "physiology and hygiene, with special reference to the effects of alcoholic drinks and other narcotics upon the human system, shall be taught in the public schools," and for the examination of teachers on the subject.

In 1883, co-operating with the Woman's Christian Temperance Unions of those States, she canvassed Michigan and New Hampshire, prior to the meeting of their legislatures, for compulsory temperance education in the public schools,



TEMPERANCE-EDUCATION MAP OF THE UNITED STATES AND TERRITORIES.
States in white have a Temperance-education Law; those in black have not.

and went to Lansing, drafted the bill, and addressed the Committee on Education and a joint session of the Legislature in its behalf. The bill provided, in addition to the requirements of the Vermont law, that the study should be taught "all pupils in all schools." Both this and the New Hampshire bill become laws, to take effect one year from their passage. Mrs. Hunt then said, "If we can carry New York and Pennsylvania for this legislation, we can carry the country by force of their example," and to the constituencies of the New York legislators she and her collaborators went. Letters and petitions addressed to the Legislature and visiting committees followed, until a majority of the members were instructed from home to vote for the temperance education bill. It passed on March 4, 1884, in exactly the form in which it had been presented to both House and Senate, as follows:

1. Provision shall be made by the proper local school authorities for instructing all pupils, in all schools supported by public money or under State control, in physiology and hygiene, with special reference to the effect of alcoholic drinks, stimulants, and narcotics upon the human system.

2. No certificate shall be granted any person to teach in the public schools of the State of New York after the first day of January, 1885, who has not passed a satisfactory examination in physiology and hygiene, with special reference to the effect of alcoholic drinks, stimulants, and narcotics upon the human system.

The Legislature of Rhode Island a few weeks later enacted a similar law. The Pennsylvania campaign of 1885 was one of the most extended and memorable. The State had been thoroughly organized for the work the year before, and now the subject was presented to the people back of nearly every legislator. In addition to this canvass of the State, Mrs. Hunt addressed a joint session of the House and Senate in behalf of the bill. The opposition roused by its stringent features was overcome as their need was set forth, and it passed the Senate unanimously and the House by a good majority. The Pennsylvania law provides:

That physiology and hygiene—which shall, in each division of the subject so pursued, include special reference to the effect of alcoholic drinks, stimulants, and narcotics upon the human system—shall be included in the branches of study now required by law to be taught in the common schools, and shall be introduced and studied as a regular branch by all pupils in all departments of the public schools of the Commonwealth, and in all educational institutions supported, wholly or in part, by money from the Commonwealth.

It shall be the duty of county, city, and borough superintendents, and boards of all educational institutions receiving aid from the Commonwealth, to report to the Superintendent of Public Instruction any failure or neglect on the part of boards of school directors, boards of school controllers, boards of education, and boards of all educational institutions receiving aid from the Commonwealth, to make proper provision, in any and all of the schools or districts under their jurisdiction, for instruction in physiology and hygiene which, in each division of the subject so pursued, gives special reference to the effect of alcoholic drinks, stimulants, and narcotics upon the human system, as required by this act; and such failure on the part of directors, controllers, boards of education, and boards of educational institutions receiving money from the Commonwealth, thus reported or otherwise satisfactorily proved, shall be deemed

sufficient cause for withholding the warrant for State appropriation of school money, to which such districts or educational institutions would otherwise be entitled.

No certificate shall be granted any person to teach in the public schools of the Commonwealth, or in any of the educational institutions receiving money from the Commonwealth, after the first Monday of June, Anno Domini 1886, who has not passed a satisfactory examination in physiology and hygiene, with special reference to the effect of alcoholic drinks, stimulants, and narcotics upon the human system.

Nine other State legislatures in 1885 enacted temperance education laws, viz., Maine, Alabama, Wisconsin, Kansas, Missouri, Nevada, Nebraska, Oregon, and Massachusetts, all using in substance the language of the New York statute, except Massachusetts, where the law is more like the Pennsylvania statute.

In 1886 Mrs. Hunt presented to Congress a temperance education bill which applied to all the Territories, the District of Columbia, the national military and naval academies at Annapolis and West Point, and the Indian and colored schools under Federal control. This bill had all the features of the Pennsylvania statute, with the more definite specifications that "the study shall be pursued with text-books by pupils able to read, and taught orally in the case of those unable." It was presented to the Senate by Senator Henry W. Blair, of New Hampshire, and in the House by Hon. Byron M. Cutchon, of Michigan. Mrs. Hunt addressed the Senate and House Committees on Education in its behalf. It passed the Senate unanimously in March. The opposition that kept it three months in the House Committee was overcome by a popular demand from all parts of the country, and it finally passed the House May 17, 1886, without amendment, with only eight votes against it, and received the President's signature May 20.

During the same year, in addition to this act of Congress, the States of Iowa, Maryland, and Connecticut enacted temperance education laws, and Michigan and Vermont amended their statutes on the subject, making them more stringent, adding in each case the important specification that the study shall be taught with text-books that shall give "at least one fourth of their space to the consideration of the nature and effects of alcoholic drinks and other narcotics, and the books used in the highest grade of graded schools shall contain at least twenty pages of matter relating to this subject." In 1887 West Virginia, Colorado, California, and Delaware enacted temperance education laws; in 1888, Ohio and Louisiana; in 1889, Florida and Illinois. In 1890, North and South Dakota, Montana, and Washington, on coming into Statehood, either re-enacted the national law or substituted a statute of their own, as did Idaho and Wyoming in 1891. North Carolina also enacted an admirable temperance education law in 1891, and Mississippi in 1892, and Alabama added strengthening amendments to her statutes. For specifications of the statutes of these and other States, see the accompanying map. The following is the explanation of the marks:

× The cross signifies that scientific temperance is a mandatory study in public schools.

* The star signifies a penalty attached to the en-

forcing clause of this statute in the State or Territory to which it is affixed.

† The dagger signifies that the study is not only mandatory, but is required of all pupils in all schools.

‡ The double dagger signifies that the study is required of all pupils in all schools, and is to be pursued with text-books in the hands of pupils able to read.

§ The parallel indicates that the study is to be taught in the same manner and as thoroughly as other required branches.

¶ The section mark indicates that text-books on this topic used in primary and intermediate schools must give one fourth their space to temperance matter, and those used in high schools not less than twenty pages.

‡ The paragraph indicates that no teacher who has not passed a satisfactory examination in this subject is granted a certificate or authorized to teach.

At the close of 1891, 35 States and all of the Territories, including the District of Columbia, the Indian and colored schools, and national military and naval academies, were under temperance education laws, covering at least 12,000,000 children of school age. Only nine States were without such legislation, and bills providing for this instruction are now before the legislatures of three of these—New Jersey, Kentucky, and Mississippi.

The Parliament of Sweden in 1891 enacted a temperance education law, while in Canada, England, Finland, Norway, Germany, France, India, Australia, and other countries, preliminary agitation for the same is going on. A gold medal was awarded the exhibits of plans, reports, text-books, etc., of this department by the French Committee of Awards at the Paris Exposition in 1889; and a like exhibit won a diploma from the Massachusetts Charitable Mechanics' Association in 1890.

But this great volume of legislation is only a part of the movement. Not only the legal demand for an entirely new study in the public schools of the whole country had to be created, but school literature for all grades of pupils, its methods of teaching, and interest and ability on the part of teachers. There were text-books on temperance, but these did not meet the need. As unhygienic habits and methods of living may lead to indulgence in alcohol and other narcotics, the remedy proposed is an all-round physical education, including enough physiology to enable the pupils to understand the laws of hygiene and the consequences of violating them, especially in the case of narcotics. These subjects are therefore made a part of the study, as demanded by law. Scientific temperance may be therefore defined as physical education; or hygiene, including the nature and effects of alcoholic drinks and other narcotics, with enough anatomy and physiology to make it intelligible.

When the movement began there were no manuals of instruction or text-books that included the whole subject. The passage of the New York law roused authors and publishers, who had before doubted there ever being a sustained demand for this school literature, and books hurriedly prepared, with little or no temperance matter, but mostly technical physiology, and badly adapted to grade, were rushed upon the market. The duty of procuring better books and the revision of the imperfect ones had to be met as the work of legislation went on. In 1887 an advisory board of representative men

was appointed. The gentlemen comprising this board are Hon. William T. Harris, LL.D., United States Commissioner of Education; Rev. A. H. Plumb, D.D.; Rev. Joseph Cook, of the Boston Monday lectureship; Daniel Dorchester, D.D., United States Superintendent of Indian Schools; William A. Mowry, Ph.D.; and William E. Sheldon, President of the National Teachers' Association in 1887. As discussion on the text-book question went on, the need of an authoritative standard became evident. In 1887, with the aid of the advisory board and special experts, a syllabus of topics that books on this subject should teach was prepared, signed by more than 260 of the most representative names of the United States in medical, chemical, educational, legislative, and other circles interested in the public good, and was sent to all publishers of this kind of literature, respectfully asking that their books on this topic be revised to contain the latest truths of science as set forth in the petition. The following is a digest of this:

If this new education is to give to the world a generation of intelligent total abstainers, its manuals of instruction must conform to the following specifications:

1. They must teach with no uncertain sound the proved findings of science, viz.: (a) That alcohol is a dangerous and seductive poison. (b) That beer, wine, and cider contain this same alcohol, thus making them dangerous drinks, to be avoided, and that they are the product of a fermentation that changes a food to a poison. (c) That it is the nature of any liquor containing alcohol to create an appetite for more, which is so apt to become uncontrollable that the strongest warning should be urged against taking that little and thus forming the appetite.

2. They must also teach the effect of these upon the human system, that is, upon the whole being, mental, moral, and physical. The appalling effects of drinking habits upon the citizenship of the nation, the degradation and crime resulting, demand that instruction here should give clear and emphatic utterance to the solemn warnings of science upon this subject.

During 1884-'85 and 1889-'91 numerous books were written or revised to meet the demands of science.

From its inception the National Department of Scientific Temperance has been in consultation with eminent authorities as to its various phases of work—legislative, physiological, chemical, and educational. In the interest of scientific accuracy, extensive researches have been made and are now carried on in the great medical libraries of Washington, New York, Philadelphia, and Boston. The headquarters of the department are at Hope Cottage, Hyde Park, Mass., a suburb of Boston. Here a corps of secretaries aid in replying to inquiries, and send out printed aids and other plans. A literary assistant searches the Index Medicus, a classified index of the current medical literature of the world, and other indexes, for all the new utterances on medical, physiological, hygienic, or chemical subjects, on sanitation, fermentation, and kindred topics. The books or articles thus found are procured, translated when necessary, carefully classified, and added to the comprehensive special library on this subject at Hope Cottage. The department has now in training persons from different parts of the country, who are

preparing to become teachers' institute instructors on this topic.

A Standard for the Enforcement of Temperance Laws, the result of conferences with experienced educators, has been formulated and signed by State and city superintendents of public instruction intrusted with the enforcement of these laws. This standard in circular form, widely circulated, constitutes the needed official opinion as to how this topic should be taught. A general oversight of this study as pursued in the schools is yearly reported, with results, by the State, county, and local superintendents, to the National Superintendent. These reports show that where the approved text-books, adapted to the various grades, and the methods of teaching as set forth in the standard of enforcement, are in use, an intelligent sentiment in favor of obeying the general laws of hygiene, especially with reference to alcoholic drinks and other narcotics, results. But where the imperfect books, chiefly technical anatomy and physiology, with little or no hygiene, are in use, less satisfactory results are reported. The returns of 1891 show a universal movement toward the approved books and methods of teaching.

TENNESSEE, a Southern State, admitted to the Union June 1, 1796; area, 42,050 square miles. The population, according to each decennial census since admission, was 105,602 in 1800; 261,727 in 1810; 422,771 in 1820; 681,904 in 1830; 829,210 in 1840; 1,002,717 in 1850; 1,109,801 in 1860; 1,258,520 in 1870; 1,542,359 in 1880; and 1,767,518 in 1890. Capital, Nashville.

Government.—The following were the State officers during the year: Governor, John P. Buchanan, Democrat; Secretary of State, Charles A. Miller; Treasurer and Insurance Commissioner, M. F. House; Comptroller, J. W. Allen; Attorney-General, G. W. Pickle; Superintendent of Public Instruction, Frank M. Smith, succeeded by W. R. Garrett; Commissioner of Agriculture, Statistics, and Mines, B. M. Hord, succeeded by D. G. Godwin; Chief Justice of the Supreme Court, Peter Turney; Associate Justices, W. C. Caldwell, B. L. Snodgrass, H. H. Lurton, and Benjamin J. Lea.

Population by Races.—The following table shows the white and colored population of the State in 1880 and 1890, as reported by the Federal census:

COUNTIES.	WHITE.		COLORED.	
	1890.	1880.	1890.	1880.
Anderson.....	13,920	9,917	1,204	903
Bedford.....	18,411	13,536	6,327	7,489
Benton.....	10,609	9,147	621	633
Bledsoe.....	5,643	4,338	491	747
Blount.....	15,954	14,773	1,632	1,705
Bradley.....	11,816	10,238	1,783	1,845
Campbell.....	12,905	9,571	581	432
Cannon.....	11,250	10,696	947	1,116
Carroll.....	17,926	16,524	5,704	5,579
Carter.....	12,688	9,835	701	623
Cheatham.....	7,297	6,295	1,543	1,661
Chester.....	7,223	.....	1,841	.....
Claiborne.....	14,577	12,584	526	759
Clay.....	6,880	6,683	80	399
Cocke.....	15,178	13,361	1,389	1,447
Coffee.....	12,127	11,164	1,399	1,723
Crockett.....	10,938	10,498	4,233	3,612
Cumberland.....	5,323	4,496	53	42
Davidson.....	66,612	47,673	41,549	31,331

COUNTIES.	WHITE.		COLORED.	
	1890.	1880.	1890.	1880.
Decatur.....	7,662	7,276	1,333	1,222
De Kalb.....	14,462	13,660	1,188	1,151
Dickson.....	11,493	10,329	2,152	2,231
Dyer.....	15,113	11,206	4,762	3,912
Fayette.....	8,264	9,033	20,614	22,235
Fentress.....	5,180	5,388	46	103
Franklin.....	15,313	13,646	3,610	3,530
Gibson.....	26,356	23,540	9,473	9,145
Giles.....	22,427	21,824	12,530	14,189
Grainger.....	12,473	11,555	716	529
Greene.....	25,047	21,850	1,566	2,152
Grundy.....	5,909	4,154	486	433
Hamblen.....	9,867	8,431	1,546	1,706
Hamilton.....	35,760	16,239	17,704	7,399
Hancock.....	9,598	8,616	744	432
Hardeman.....	12,082	13,313	5,947	9,608
Hardin.....	15,269	12,775	2,429	2,016
Hawkins.....	19,326	17,956	2,390	2,641
Haywood.....	7,355	8,497	15,723	17,556
Henderson.....	18,594	14,414	2,442	3,016
Henry.....	15,202	15,483	5,668	6,654
Hickman.....	11,729	9,849	2,770	2,346
Houston.....	4,553	3,467	837	808
Humphreys.....	10,173	9,703	1,542	1,671
Jackson.....	12,335	11,575	480	433
James.....	4,362	4,478	534	617
Jefferson.....	14,269	13,859	2,206	2,500
Johnson.....	8,478	7,235	877	470
Knox.....	43,422	31,850	11,127	7,244
Lake.....	4,426	3,274	1,070	691
Lauderdale.....	10,510	9,631	7,946	5,837
Lawrence.....	11,492	9,799	734	784
Lewis.....	2,396	1,963	219	218
Lincoln.....	21,074	20,643	6,807	6,810
London.....	7,305	7,332	1,459	1,758
McMinn.....	15,722	12,718	2,168	2,325
McNairy.....	13,602	14,845	1,908	2,426
Macon.....	10,095	8,429	732	890
Madison.....	15,509	15,406	14,634	15,467
Marion.....	12,977	9,541	2,434	1,369
Marshall.....	14,365	14,429	4,538	4,880
Mary.....	22,090	21,731	16,022	18,171
Meigs.....	6,208	6,703	721	814
Monroe.....	14,046	12,991	1,272	1,232
Montgomery.....	15,798	14,736	13,903	13,694
Moore.....	5,434	5,448	541	785
Morgan.....	7,303	4,677	336	259
Obion.....	22,336	18,841	4,335	4,069
Overton.....	11,767	11,811	272	242
Perry.....	7,114	6,609	671	565
Pickett.....	4,725	.....	11	.....
Polk.....	7,771	6,898	579	244
Putnam.....	13,045	10,903	698	598
Rhea.....	10,571	6,300	1,771	773
Roane.....	15,460	13,310	1,957	1,906
Robertson.....	14,524	13,242	5,543	5,613
Rutherford.....	20,595	20,248	14,592	16,493
Scott.....	9,423	5,864	371	137
Sequatchie.....	2,943	2,579	76	56
Sevier.....	18,134	14,843	627	673
Shelby.....	51,021	34,508	61,674	43,903
Smith.....	15,406	14,215	2,997	3,573
Stewart.....	16,015	9,933	2,177	2,757
Sullivan.....	19,457	17,011	1,422	1,305
Sumner.....	17,257	16,294	6,499	7,331
Tipton.....	12,436	10,482	11,335	10,543
Trousdale.....	4,013	4,505	1,332	2,141
Union.....	4,383	8,526	231	119
Union.....	11,351	10,402	107	213
Van Buren.....	2,734	2,747	67	136
Warren.....	12,591	11,801	2,022	2,276
Washington.....	13,339	14,604	1,964	1,577
Wayne.....	10,600	10,232	871	1,069
Weakley.....	24,330	20,125	4,623	4,413
White.....	11,513	10,173	835	983
Williamson.....	16,162	15,922	10,159	12,390
Wilson.....	19,793	20,292	7,350	8,455
The State.....	1,332,971	1,133,381	434,300	403,151

- There were also in the State, in 1890, 64 Chinese, 10 Japanese, and 173 Indians.

Finances.—For the two years ending Dec. 20, 1890, the total receipts of the State treasury, including a cash balance of \$221,702.06 at the beginning of the period, were \$3,957,000.06; the

total disbursements were \$3,877,234.20; and there remained a balance on Dec. 20, 1890, of \$79,765.86. Financially the State is in a more promising condition than at any time since the close of the rebellion, although an immense debt still hangs over it, the interest on which it is not yet able to meet fully without further borrowing. The General Assembly this year at its extra session revised the tax laws so as to increase the revenue, and at the regular session provided for refunding a considerable part of the State debt at a lower rate of interest, so that before 1893 the revenue will probably be sufficient to support the Government and meet all interest charges.

Legislative Sessions.—The regular biennial session of the General Assembly began on the first Monday of January, and ended on March 30. On Jan. 26 M. F. House was elected State Treasurer and J. W. Allen State Comptroller. In order to reduce interest on the public debt, the Funding Board was required to issue and sell new 4-per-cent. bonds, payable in fifteen years, and with the proceeds to redeem the 5, 5½, and 6 per cent. bonds issued in 1883, known as the State debt proper bonds. The same board was authorized to borrow such sums as may be necessary to pay the interest on the State debt up to January, 1893, and to issue notes therefor, payable out of any sums hereafter in the treasury not otherwise appropriated.

The following new congressional districts were established:

First District.—Counties of Johnson, Carter, Sullivan, Washington, Unicoi, Hawkins, Greene, Hamblen, Hancock, Claiborne, Cooke, and Grainger.

Second District.—Jefferson, Union, Sevier, Blount, Knox, Loudon, Roane, Anderson, Morgan, Campbell, and Scott.

Third District.—Monroe, Polk, Bradley, Hamilton, James, McMinn, Bledsoe, Grundy, Van Buren, White, Warren, Franklin, Marion, Meigs, and Sequatchie.

Fourth District.—Sumner, Wilson, Macon, Trousdale, Smith, Clay, Jackson, Overton, Putnam, Fentress, Pickett, Cumberland, and Rhea.

Fifth District.—Coffee, Lincoln, Moore, Rutherford, Marshall, Bedford, Cannon, and De Kalb.

Sixth District.—Davidson, Robertson, Cheatham, Montgomery, Stewart, Humphreys, and Houston.

Seventh District.—Williamson, Maury, Giles, Lawrence, Wayne, Lewis, Hickman, and Dickson.

Eighth District.—Henry, Benton, Perry, Decatur, Hardin, McNairy, Henderson, Madison, Carroll, and Chester.

Ninth District.—Weakley, Gibson, Crockett, Haywood, Lauderdale, Dyer, Obion, and Lake.

Tenth District.—Hardeman, Fayette, Shelby, and Tipton.

Provision was made for pensioning disabled Federal and Confederate soldiers and sailors, a board of State pension examiners being created to pass upon all applications. The allowance for total disability was fixed at \$25 a month, and for partial disability from \$10 to \$8.33½ a month.

All railroads, other than street railroads, were required to furnish equal but separate accommodations for the white and colored races, by providing two or more passenger cars for each train, or by dividing each car by a partition. All conductors were given authority to assign passengers to the proper car or apartment thereof.

A board of commissioners was created and authorized to distribute the sum received by the

State as a refund of the direct tax of 1861 among the persons that originally paid such tax, or their representatives.

Action upon a bill authorizing an appropriation for the World's Columbian Exposition was postponed until final disposition by Congress of the Federal Elections bill pending before that body, after which time the original bill was killed, and another was passed empowering the county courts to appropriate money for the purpose of exhibiting the resources of the county at the Exposition.

The Governor was authorized to appoint a commission to make, or cause to be made, surveys for locating a route for a canal or canals connecting the Cumberland and Tennessee rivers and the Tennessee and Mississippi rivers, and to collect facts of interest relating to such proposed canals, for the purpose of laying the subject before Congress. Another act provides that hereafter all mineral interests in land in the State shall be subject to taxation. The sum of \$25,000 was appropriated for a building with improvements, to be occupied as a home for disabled Confederate soldiers, to be erected upon the "Hermitage" at Nashville. The sum of \$10,000 was also appropriated for the support of such home for 1891 and 1892.

An amendment to Section 13, Article XI, of the State Constitution was proposed for submission to the people, giving to the General Assembly power to enact laws "for the construction, maintenance, working, and laying out of public roads, laws defining and establishing legal fences and abolishing all fences; also laws regulating elections."

Other acts of the session were as follow:

Setting apart the first Monday in September as a legal holiday, to be known as Labor Day.

Incorporating the city of Harriman and the city of Athens.

Amending the law giving contractors, laborers, material men, and others engaged in locating, constructing, repairing, or equipping any railroad a lien on the property of such road.

To prohibit the selling, giving, or furnishing of any cigarettes, cigarette paper, or any substitute for them, to any minor.

To regulate the practice of dentistry.

Making it a misdemeanor for any person to carry on the business of barbering on Sunday.

To establish county work-houses, to provide for working convicts sentenced to such houses; to declare county jails work-houses in such counties as have no separate work-houses, and to provide a superintendent and other officers therefor.

Allowing railroad companies to purchase and consolidate with branch lines, but forbidding the consolidation of parallel or competing lines.

To protect the public against fraudulent pedigrees in live stock.

Authorizing the erection and maintenance of county asylums for the insane, the poor, and the inebriate in counties of 4,000 inhabitants or over.

To enable county courts to inaugurate general improvements in public roads, and to authorize the issue of county bonds in order to raise money for such improvements.

To regulate the business of building and loan associations.

To provide for an enumeration of the male inhabitants of the State of twenty-one years and upward.

Authorizing the city of Knoxville to issue bonds to the amount of \$500,000, the proceeds from the sale of which to be devoted to the following objects, viz.,

\$250,000 for sewers, \$125,000 for bridges, and \$125,000 for streets.

Assenting to the provisions of the act of Congress appropriating money for the more complete endowment and support of colleges of agriculture and the mechanic arts in the several States.

Revising and codifying the State insurance laws.

To declare unlawful all trusts, pools, contracts, arrangements, and combinations in restraint of trade, production, manufacture, and sale.

On Aug. 7, Gov. Buchanan issued his proclamation calling an extra session of the General Assembly to meet on Aug. 31. The chief cause for this action was the disturbances in East Tennessee, arising out of the employment of State convicts in the mines in competition with free labor, an account of which is given elsewhere. The leading subjects proposed by the Governor for legislative action related to the abolition of the convict lease system, or such modification thereof as would prevent the employment of convicts in mines, and thereby meet the demands of the belligerent miners. Early in the session a committee was appointed to confer with the Penitentiary lessees, and ascertain whether they would consent to any modification of their lease which would require the State convicts to be worked at certain mines where no other labor should be employed, and whether they would sublet a portion of the convicts to be used in constructing a State penitentiary. The result of these negotiations was not wholly satisfactory to the legislators. After prolonged and excited discussion the session came to an end on Sept. 21 without any action on this subject, the legislators refusing to entail upon the State the expense of building a new penitentiary such as the abolition of the lease system would necessitate. In addition to refusing the demands of the miners, the Assembly enacted several laws designed to prevent further outbreaks by them. Authority was given to the Governor to summon and use the sheriff of each county with a posse of as many men as the Governor shall designate, and to call out the State Guard of Tennessee whenever he shall deem it necessary for the purpose of repelling invasion or suppressing insurrections, mobs, and like unlawful assemblies, whether existing or imminent. He may keep such force in the employ of the State as long as a necessity therefor exists, but such authority shall continue only until the close of the next regular session of the General Assembly. By another act it was declared a felony for any person to hinder, interrupt, or interfere with the working of convicts or work-house prisoners, wherever they may be, or to act as a leader of any mob or company of men who shall so interfere, the punishment being imprisonment from one to seven years. The sum of \$25,000 was appropriated for the support and maintenance of the State militia in case their services should be needed.

At this session an act was also passed restricting the State for members of the State Senate and House of Representatives. It was enacted that all ballots hereafter cast in elections shall be of plain white paper, seven inches long and three inches wide. It was made unlawful to place any picture, sign, color, mark, or insignia thereon, except the names of the candidates and the office.

Other acts of the session were as follow :

To compel all persons, firms, corporations and companies engaged in constructing railroads or in mining or manufacturing to settle with their employes at least once in thirty days, and to pay them in lawful money of the United States.

To prohibit prize fighting, sparring matches, and other brutal sports or exhibitions, and to punish participants therein.

Creating a State Board of World's Fair managers.

Education.—The following public-school statistics, covering the school year ending June 30, 1890, are reported by the State Superintendent: Children of school age (between six and twenty-one years), white males, 261,796; white females, 248,793; colored males, 88,372; colored females, 87,349; total, 686,310; pupils enrolled, 420,104; average daily attendance, 296,765; average length of school year, in days, 86; teachers employed, males, 4,827; females, 3,084; average monthly wages of teachers, \$31.24; number of white schools, 5,395; colored schools, 1,536; school-houses, 6,048; erected during the year, 265; value of school property, \$2,830,319.61.

The financial statement for the year is as follows: Amount on hand July 1, 1889, \$620,752.29; received from the State, \$128,806.87; from the counties, \$1,206,926.26; from other sources, \$82,072.92; total receipts, \$2,038,558.35. Expenditures: Teachers' salaries, \$1,078,265.63; school sites, buildings, and repairs, \$77,256.99; furniture, etc., \$36,855.44; other expenses, \$106,982.61; total expenses, \$1,300,351.67; balance on hand, July 1, 1890, \$738,206.68. During the year 1,069 private schools reported 1,447 teachers, 40,683 pupils enrolled, and an average attendance of 28,378.

At the State University the attendance for the year ending 1890 was as follow: Academic Department, 251; Law Department (established in February), 8; Medical and Dental Department, 251; total, 510.

Charities.—At the Eastern Hospital for the Insane there were 232 patients on Dec. 19, 1888; 182 were admitted during the two years ensuing, and 163 were discharged, leaving 251 on Dec. 19, 1890. The total receipts for the two years were \$107,899.98, and the total expense \$100,075.51. At the Western Hospital there were received on Nov. 22, 1889, from the Central Hospital 156 patients, being the first installment of patients received at this institution, the buildings for which were then in an unfinished condition. Up to Dec. 19, 1890, there had been received 128 other patients, and 35 had been discharged, leaving 249 in the hospital on the latter date. The expenses up to Dec. 19, 1890, were \$52,419.45, and the receipts \$44,422.02. The Central Hospital, at Nashville, contained 432 patients on Dec. 19, 1888; during the two years following 289 were admitted and 335 discharged (including 156 transferred to the Western Hospital), leaving 386 remaining on Dec. 19, 1890. The receipts were \$150,927.95, and the expenses \$152,205.07. On March 13, 1891, the buildings at this hospital used for the male patients were entirely destroyed by fire, several of the inmates losing their lives. Those who escaped and could not be accommodated at the other buildings, being about 100 in number, were transferred to the Western Hospital.

At the Tennessee School for the Blind there were 72 white and 13 colored pupils in December, 1890. The receipts for two years were \$34,005.60, and the expenses \$33,430.15. The Tennessee Deaf and Dumb School contained 127 pupils on the same date. The receipts for the preceding two years were \$58,308.10, and the expenses \$55,408.10.

Industrial School.—Since the opening of the State Industrial School in 1887, 203 white and 32 colored persons have been placed under its discipline, of whom 65 white and 7 colored had been discharged up to Dec. 1, 1890, leaving on the latter date 138 white and 25 colored persons in the institution. For the two years ending Dec. 1, 1890, the receipts were \$35,800.27, and the expenses \$35,884.43.

Convict Mining Troubles.—On the night of July 14 a mob of 300 armed men, composed of miners and persons in sympathy with them, attacked and overpowered the guards at the State convict camp at Briceville, in Anderson County, and forced the lessees having charge of the prisoners to carry them by train to Knoxville. The local authorities, being powerless to cope with the mob, called upon the Governor for assistance, and on July 15 he ordered Adjutant-General Norman to place two Chattanooga companies of the militia and one Knoxville company under orders to go to Briceville. Taking a train from Nashville, the Governor was joined at Chattanooga by the two companies and at Knoxville by the third company. At the latter place, where he arrived on the morning of July 16, the car containing the expelled convicts was attached to the train, and Briceville was reached on the same day at noon. The mob having already dispersed, the convicts were peaceably returned to camp, the number of guards increased, and a detachment of the militia left to insure protection. At the request of a committee of the miners, the Governor then attended one of their meetings near Briceville, at which he counseled obedience to law, and emphasized his determination to preserve order. The grievances of the miners, as set forth at this meeting, were that the Tennessee Coal and Iron Company, their employer, and the lessee of the State convicts, habitually paid them in scrip instead of lawful money; that they were not free to purchase their supplies wherever they desired; and that, when they asserted their right under the law to appoint their own check-weighman to protect their interests in the weighing of coal mined, the company at once shut down their mines in order to bring them to terms. A still greater grievance was, that they were compelled to work in competition with low-priced convict labor, the presence of which was used by the company as a scourge to force free laborers to its terms. The Governor returned to Nashville on July 18, and ordered Adjutant-General Norman to Briceville as his representative. Before the latter reached his destination the miners had gathered from various quarters, armed forces coming from Kentucky to aid them, until they had sufficient numbers to overpower the guards and militia; and the latter, to avoid a disastrous conflict, agreed to withdraw the convicts again to Knoxville. The Governor then ordered out ten companies of militia, and again went to Knoxville

on July 21. There, on July 22, a committee of the miners asked for a conference, and after two days of negotiation they agreed to submit to a return of the convicts, with the understanding that the Governor would call an extra session of the Legislature and advise the repeal of the lease system, or its modification to meet the demands of the miners, together with such other legislation as would give them their rights. Accordingly, on Aug. 7 the Governor issued his proclamation calling an extra session to meet on Aug. 31. The proceedings of this session are elsewhere treated. It not only failed to make the slightest change from the lease system or in the terms of the existing lease, but it conferred greater powers upon the Governor for preserving order, and imposed heavy penalties for interference with convicts. Its only concession to the miners was an act requiring the payment of employés in cash, and a settlement with them at least once in thirty days. This result was accepted with ill grace by the miners, and by the people of the eastern part of the State, who were generally in sympathy with the miners, and whose attitude made the work of the mob in each case much less difficult than it would otherwise have been. After the close of the session, on Sept. 21, a period of quiet ensued, during which the miners sought to obtain relief through the courts. A case was brought in the local court based upon the claim that the mines were not a prison within the meaning of the convict lease, and that prisoners were illegally worked therein. The local judge sustained this view, but the State Supreme Court, to which the case was appealed in October, reversed the decision. The miners thereupon took matters into their own hands again. On the night of Oct. 30 an armed mob of about 2,000 persons visited the camps at Briceville and Coal Creek, intimidated the guards, set free 305 convicts, furnishing them with citizens' clothing, set fire to the camps, and ransacked the store of the mining company at Coal Creek. The news of this outbreak brought Gov. Buchanan to Knoxville again, where he issued a proclamation on Nov. 2, offering a reward of \$5,000 for the capture and conviction of the leaders of the mob, and \$25 for the capture and return of each of the escaped convicts. Meanwhile, on the morning of the same day, an armed mob of about 200 horsemen descended upon the camp at Oliver Springs, released about 150 convicts, and set fire to the camp. This new humiliation was followed by a new proclamation of the Governor offering the same rewards as in the Briceville and Coal Creek affair. Great efforts were now made to recapture the released convicts; but the work was slow, and many had left the State. In the course of five or six weeks about 300 had been returned to the main prison at Nashville, where they were kept to await the orders of the Governor. Meanwhile the stockades at the mines were rebuilt, and late in December preparations were made to return the convicts for the third time to Briceville. On their return journey, Jan. 1, 1892, they came accompanied by 108 militiamen, with Gatling guns and with supplies for three months. No opposition was offered by the miners. At the close of the year the mob leaders were still undiscovered.

Agriculture.—The State Bureau of Agriculture reports the following statistics for 1890: Wheat, acres sown, 1,306,228, yield, 3,587,980 bushels; corn, 3,410,526 acres, yield, 55,269,865 bushels; cotton, 820,719 acres, yield, 344,385 bales; tobacco, 34,966 acres, yield, 22,080,844 pounds; pea-nuts, 18,012 acres, yield, 17,440,969 pounds. The live stock on farms in April, 1890, was as follows: Horses, 289,057, value, \$21,879,907; mules, 190,542, value, \$15,307,559; cows, 342,508, value, \$6,477,252; other cattle, 474,656, value, \$4,773,491; sheep, 427,623, value, \$832,330; hogs, 1,916,363, value, \$5,835,430.

Coal.—The product during the year ending June 30, 1880, as reported to the tenth census, was 495,131 short tons, valued at \$629,724 at the mines, an average of \$1.27 a ton. During 1889 the total production was 1,925,689 short tons, valued at \$2,338,309 at the mines, an average of \$1.21 a ton. The number of mine employes in 1889 was 4,108, and the wages paid \$1,609,310. The mining expenses were \$2,113,292, and the capital employed, \$4,362,711.

Pensions.—Under the pension law passed by the General Assembly this year the board of pension examiners had received 816 applications up to Nov. 25. Of these, 367 were allowed, 351 rejected, and the others are pending. The pensions already allowed aggregate \$42,320 yearly.

TEXAS, a Southern State, admitted to the Union Dec. 29, 1845; area, 265,780 square miles; population, according to the census of 1890, 2,235,523. Capital, Austin.

Government.—The following were the State officers during the year: Governor, James S. Hogg, Democrat; Lieutenant-Governor, George C. Pendleton; Secretary of State, George W. Smith; Treasurer, W. B. Wortham; Comptroller, John D. McCall; Attorney-General, Charles A. Culbertson; Superintendent of Public Instruction, H. C. Pritchett to August, when J. M. Carlisle was appointed; Adjutant-General, W. H. Mabry; Commissioner of General Land Office, W. L. McGaughey; State Health Officer, Dr. R. M. Swearingen; Commissioner of Insurance, L. L. Foster, succeeded in August by J. E. F. Hollingsworth; Chief Justice of the Supreme Court, John W. Stayton; Associate Justices, Reuben R. Gaines and John L. Henry; Court of Appeals, Presiding Judge, John P. White; Judges, Samuel A. Willson and James M. Hurt. D. P. Marr was appointed on the commission of the Court of Appeals Jan. 30, and C. C. Garrett, May 7.

Finances.—The receipts for the year ending Aug. 31, 1891, were \$2,561,039.42, exclusive of the transfers. This was derived principally from the following sources: Taxes of 1889, \$24,351.55; of 1890, \$1,974,696.76; of 1891, \$148,979.42; special taxes and fees collected by Comptroller, \$127,330.13; refunded by United States frontier protection, \$145,037.18; refunded to appropriations, \$86,835.65; half of land sales, act of July, 1879, \$75,110.87; office fees, State Department, \$48,878.59; office fees, General Land Office, \$21,980.81; office fees, Insurance Department, \$14,034.70; half of land sales, act of March, 1887, \$15,647.11.

The disbursements for the year were \$2,167,498.21, exclusive of transfers. The balance in the treasury Aug. 31, 1890, was \$618,622.66, and Aug. 31, 1891, it was \$1,007,193.87.

The bonded debt of the State remains the same as last year, \$4,237,730. The redemption of the \$41,700 of the 6-per-cent. funding bonds of act of May 2, 1871, held by individuals, and of the \$207,000 of 7-per-cent. revenue deficiency bonds of act of Dec. 2, 1871, also held by individuals, has been provided for by the general appropriation act, approved April 16, 1891, which provides for their payment by an issue of 5-per-cent. bonds, to be sold to the permanent school fund. The total amount held by individuals is \$1,019,590. No provision has been made for the redemption of the \$200,000 6-per-cent. revenue deficiency bonds of act of Feb. 13, 1885, held by special funds, which fell due Jan. 1, 1890.

The total assessed value of real estate was \$577,621,608, and of personal property \$278,578,675; total, \$856,200,283, showing an increase over the preceding year of \$53,344,398 in real estate and \$20,744,002 in personal property, or a total increase of \$74,088,400 over the values of 1890. The rate of tax was 20 cents on each \$100.

Education.—The latest available report of the common schools gives the following summary: Number of schools taught, 9,065; number of graded schools, not including cities, 307; number of high schools, not in cities, 109; average school term in months in cities, 7-62; in district counties, 5-01; in community counties, 4-83; total number of pupils enrolled, 466,872; number of teachers employed in 90 cities and 193 counties, 10,980; number of public school-houses belonging to the State, 5,326; number rented or leased, 2,998; number of public-school libraries, 103; number of volumes, 16,107; average monthly salary in cities and independent districts, \$59.39. The total amount paid to teachers was \$2,533,644.62, and the total amount of expenditures, \$3,178,299.96.

The latest biennial report of the University of Texas, at Austin, gives the number of the faculty at 17, and the total number of students at 307, of whom 4 are in the post-graduate course, 79 are in the law course, 87 are irregular and special students, and the remainder in the regular under-graduate course. The estimated income for 1890-'91 from interest on State bonds, lease of lands, interest on land sales, and fees, was \$52,983.54.

The university received in December the proffer of a valuable library from Tank Kee, a lecturer on China. This library embraces 38,000 volumes, some of them rare old manuscripts, but most of them in English print, and all valuable bound books, which he has been twenty years collecting, and are valued at from \$120,000 to \$150,000. They all refer to China, and are represented to be the most complete collection of the history, literature, religion, arts, etc., of the Chinese in the world.

A medical branch of the university was opened at Galveston, Oct. 1. The sum of \$52,000 was appropriated for its equipment and maintenance.

In May, \$200,000 was given by W. M. Rice, of New York, formerly of Houston to establish in Houston the William M. Rice Institute for the Advancement of Literature, Science, and Art.

The Sam Houston Normal Institute at Huntsville had an enrollment of 313. The State appropriation in 1890 was \$20,000, and the total

receipts, including the balance at the beginning of the year, \$54,023.16. A new building has been erected with a State appropriation of \$40,000. The Houston Memorial Hall in this building is one of the finest auditoriums in the State, having accommodations for 1,500. H. C. Pritchett was appointed President in August.

Legislative Session.—The twenty-second Legislature met on Jan. 13 and adjourned on April 13. Two of the laws passed occasioned a great amount of adverse criticism and opposition on the part of the public. One of these was the bill establishing a railroad commission. The Governor, in his message, called the attention of the Legislature to the constitutional amendment requiring it to "pass laws regulating railroad freight and passenger tariffs," and to "provide all requisite means and agencies with such powers as may be deemed adequate and advisable." The act passed on this subject was entitled "An Act to establish a railroad commission for the State of Texas, whereby discrimination and extortion in railroad charges may be prevented, and reasonable freight and passenger tariffs may be established; to prescribe and authorize the making of rules and regulations to govern the commission and the railroads, and afford railway companies and other parties adequate remedies; to prescribe penalties for the violation of this act, and to provide means and rules for its enforcement." It provided for the appointment by the Governor, with the consent of the Senate, of a railroad commission of three persons not interested in any railroad, to receive each an annual salary of \$4,000 from the State, with provisions for salaries of secretary and clerks and traveling expenses; they were to have power to govern and regulate railroad freight and passenger traffic; to classify all freight, to fix the rates, to adjust the division of the charges on freight carried over more than one line, and to fix rates for storage and handling of freight, and the use of cars not unloaded by the consignee. Any railroad company having cause of complaint against the rulings of the commission should have the right to file a petition in court, when the case should take precedence of all other causes of a different nature. The commission should investigate all complaints against the companies and impose the damages, if any, the case to be taken to the courts only in case of the failure of the company to pay, when the evidence taken by the commission, if reduced to writing and sworn to, could be used in court. The commissioners also to have the right to inspect the books and papers of any company, and to examine under oath any officer, agent, or employé of such railroad in relation to its business and affairs; and for any failure to allow such inspection the company should pay a fine of not less than \$125 nor more than \$500 for each day it should so fail or refuse. This act originated in the House and passed it by a vote of 92 to 5, and passed the Senate by a vote of 26 to 0. It was approved April 3.

It was objected to this bill, on the part of the railroads, that it conferred almost absolute powers on the commission; that by the exercise of its powers that commission could bankrupt any railway in the State; and as soon as the commission began its work complaints were made of

unjust discrimination in specific cases. Objections were also made to the office of commissioner being made appointive instead of elective.

The other important bill mentioned was entitled "An Act to prohibit aliens from acquiring title to or owning lands within the State of Texas." It provided that no person not a citizen of the United States could own land in Texas unless he had declared his intention of becoming a citizen of that State. All aliens who should hereafter take lands by devise or descent could hold them for six years and no longer, except in the case of minors, who should be exempt six years after coming of age, or of persons of unsound mind. The act was, of course, intended to bar out foreign corporations rather than individuals, but applied to both; and it was a question whether the charters of such corporations, as contracts with the State, would not enable them to stand upon their rights against the law. A test case came up in a suit against an individual owner, and the law was pronounced void for want of a proper title. The judge also said that the act was at variance with treaties and conventions existing between the United States and other powers.

The Confederate Soldiers' Home, at Austin, was transferred from private to State management, to be placed in charge of a board of 5 ex-Confederate soldiers appointed by the Governor, and \$25,000 was appropriated to provide additional buildings, and \$50,000 for the maintenance of the home for two years.

Among other acts passed during the session were the following:

Prohibiting prize fighting.

Preventing the acquirement of title to land by ten years' possession under certain circumstances. This provides that no person, firm, or corporation, who have now or shall hereafter have within one inclosure more than 2,000 acres, including in the same land belonging to others, shall have any right to claim such land other than their own, by reason of ten years' occupancy or possession of the same, unless such land not their own has been segregated and separated from all other lands, and fenced in a separate inclosure for a period of ten years, or unless at least one tenth of the land so claimed has been used for the same period for agricultural purposes.

Providing for the destruction of wolves and other wild animals.

Making abstracts of land titles or land-title books to lands in this State compiled from the records of any county in this State prior to the year 1880, which said records have been partially or wholly destroyed from any cause prior to the year 1880, *prima facie* evidence of the truth of the data or memoranda shown by such abstracts of land titles or land-title abstract books, subject to certain conditions. [The bill provides that abstracts of land titles certified to by the compiler shall be received as testimony as to the validity of titles.]

To close barber shops on Sundays.

To fix the rate of taxation for the maintenance of the public free schools at twenty cents on the hundred dollars.

To make express companies subject to the control of the railroad commission.

To create the county of Sterling out of Tom Green County.

Providing a pension of \$150 for Madam Andrea Castanon de Villanueva, better known in history as Madam Candelaria, of San Antonio, who was a nurse to the sick Texans during the siege of the Alamo.

To protect the seagull, tern, shearwater, egret, heron, and pelican, and their eggs.

Regulating corporations engaged in the business of guaranteeing or acting as security for the fidelity of persons in public or private offices, employments, or positions.

Giving the county judge, under the direction of the State superintendent, the immediate supervision of all matters pertaining to public education in his county.

Regulating the establishment of quarantine.

Authorizing Jewish rabbis to perform marriage ceremonies.

Regulating voting in cities and towns of 5,000 inhabitants or more.

Requiring railroad companies to provide separate coaches for white and negro passengers, with penalty for failure of a fine not exceeding \$1,000, each trip run by any train without such separate coaches to be deemed a separate offense. A supplementary bill vests official power in conductors, and allows nurses to travel with their mistresses.

To encourage the construction and maintenance of deep-water harbors, navigable channels, docks, and wharves on the Gulf coast within the State of Texas. This provides that any individual, association of individuals, company, or corporation, who is now authorized or who may hereafter be authorized by an act of Congress of the United States to construct, own, operate, or maintain with private capital a deep-water harbor, navigable channel, docks, or wharves on the Gulf coast of Texas, shall be permitted to purchase certain lands from the State.

The appropriations made amounted to \$4,700,000.

The Governor vetoed a bill passed accepting a bonus to the State by the United States on the sugar produced on the convict farms.

In April, United States Senator Reagan resigned his seat, and on April 23 the Governor appointed Horace Chilton, of Tyler, to fill the vacancy.

John H. Reagan, L. L. Foster, and W. P. McLean were appointed railroad commissioners.

Amendments to the Constitution, voted favorably upon by the people and declared adopted, Sept. 22, allowed local option in small communities; reduced the legal rate of interest to 6 per cent., and declared anything over 10 per cent. usurious; authorized the use of 1 per cent. of the permanent school fund per annum; provided for preventing and punishing frauds in elections; and authorized the reorganization of the higher courts of the State.

Extra Session.—An extra session of the Legislature was called to meet in the spring of 1892. Among the subjects to come up were changes in the railroad commission law, the repeal or modification of the alien land law, the location of the new courts, and the election of a successor to Senator John H. Reagan.

Charities.—The Deaf and Dumb Asylum at Austin received an appropriation of \$30,000 from the Legislature for a new building, which was finished in September. It has accommodations for 350 inmates. The enrollment is 233, with an attendance of 195. The Asylum for Deaf, Dumb, and Blind Colored Youth has an enrollment of 64, with an attendance of 60. The annual expense is about \$15,000.

The State Lunatic Asylum, at Austin, cost \$130,326.54 for the year, of which \$107,946.59 was for actual maintenance. The number of inmates on Oct. 31, 1891, was 629. During the year 27 were discharged restored and 37 improved. The percentage of recoveries of those that were admitted was 25.47, and of both recovered and improved, 60.37.

The North Texas Hospital for the Insane, at Terrell, had a total of 606 patients on Nov. 1, 1891. The whole number under treatment for the year was 862. Of these, 198 were discharged, 50 died, and 2 escaped. It was maintained at a cost of \$112,137.91.

A new institution, the Southwest Texas Lunatic Asylum, was opened in December. It is at Florine, a little station on the Aransas Pass Railway, 5 miles south of San Antonio. The building, which is composed of 5 parts, has a frontage of 400 feet, and a tower rising nearly 140 feet from the surface of the hill on which the structure stands. It is of white Calaveras brick, and was built at a cost of about \$180,000, exclusive of the heating apparatus, the plumbing, and the artesian well. About 300 patients can be accommodated in it with quarters which are much more comfortable than those of the other State asylums.

Military.—The State militia is made up of 73 companies, with an aggregate number of 3,073, with armories valued at \$68,100. Other armories were rented at a cost of \$6,518 for the year. The Frontier Battalion traveled 50,929 miles, and made 368 arrests, with other assistance to the civil authorities. A permanent location for the annual encampments has been secured this year. It is about 3 miles from Austin, near the great dam lake. The land and money for the necessary improvements were given by the citizens of Austin.

A squad of United States regulars had a skirmish in Hidalgo County, Dec. 22, with a company of Garza's Mexican revolutionists, in which Corporal Ediston was killed. Gen. Stanley sent troops from San Antonio to the assistance of those at Laredo.

Minerals.—A recent bulletin issued by the Census Office at Washington shows the product of coal in Texas during the census year to have been 128,216 tons, with a spot value of \$340,620, and an average price of \$2.66.

The amount of silver bullion credited to the State in Wells, Fargo & Co.'s annual report was \$264,423.

Attention has been attracted by the announcement of the discovery of a new mineral resembling asphalt, impervious to water, and unaffected by heat, acid, or alkalis. It is claimed for this new substance that "it is the most perfect insulator yet discovered; that it may be used as a paint that will resist the action of heat, salt air, salt or fresh water, gases, or the other influences that destroy the paints now in use; that it will make a perfect varnish which the ammonia gases of the stable will not tarnish, and that will remain undisturbed under all atmospheric conditions; that it may be rolled into a tissue that is entirely free from odor and practically indestructible when employed in the making of mackintoshes, canvas belting, water-proof tents, etc.; that it possesses peculiar powers of penetration when applied at high temperatures, enabling it to enter and fill the pores of iron and steel, making these metals absolutely impervious to acids, etc., and making common leather entirely water-proof; and that it may be applied to wood pulp in such a way as to transform that material into what looks and acts like ebony or horn."

TURKEY, an empire in southeastern Europe and western Asia. The throne descends to the eldest of the princes of the house of Osman. The Constitution proclaimed on Dec. 23, 1876, is practically annulled, no Assembly having been convoked since 1877. The Sultan is represented as ruler of the state by the *Sadr-azam* or *Vizier*, and as Supreme *Khalif* or ecclesiastical chief of the Mohammedans by the *Sheikh-ul-Islam*. The reigning Sultan is *Abdul Hamid II*, born Sept. 22, 1842, who succeeded to the throne when his brother, *Murad V*, on Aug. 31, 1876, was deposed on the ground of insanity. The *Sheikh-ul-Islam*, in the beginning of 1891, was *Omer Lufti Effendi*, and the Grand *Vizier* was *Kiamil Pasha*, who presided over the following Cabinet of ministers: *Aarif Pasha*, President of the Council of State; *Said Pasha*, Minister of Foreign Affairs; *Ali Said Pasha*, Minister of War; *Hassan Pasha*, Minister of Marine; *Munir Pasha*, Minister of the Interior; *Raif Pasha*, Minister of Public Works and Commerce; *Riza Pasha*, Minister of Justice; *Agop Pasha Kazazian*, Minister of Finance and the Civil List; *Munif Pasha*, Minister of Education; *Zihni Pasha*, Minister of Evkafs or ecclesiastical affairs.

Area and Population.—The area of the Ottoman Empire, including Bulgaria and Eastern Roumelia, Bosnia and Herzegovina, Samos, Egypt, and Tripoli, is 1,652,533 square miles, and the total population is estimated at 33,566,000. The territory under the immediate rule of the Sultan embraces 63,850 square miles in Europe, with 5,600,000 inhabitants, and 729,170 square miles in Asia, with 15,430,000 inhabitants. In European Turkey about one quarter of the population are *Osmanli Turks*, one quarter are Greeks, one fifth Albanians, and the rest are Serbs, Bulgars, Wallachians, Armenians, Magyars, gypsies, Jews, and Circassians. In Asiatic Turkey the Turks form a large proportion of the population, and there are 4,000,000 Arabs, after whom the Greeks, Syrians, Kurds, Armenians, Circassians, and Jews are the most numerous races. The principal cities of European Turkey are Constantinople, the capital, with 873,565 inhabitants in 1885; Salonica, with about 150,000; and Adrianople, with 70,000. In Asia, Smyrna has 186,510; Damascus, about 150,000; Aleppo, 110,000; Bagdad, 100,000; Beirut, 70,000; Erzerum, 60,000; Brussa, 60,000.

Finances.—The last official budget, that for the year ending March 12, 1884, estimated the receipts at 1,631,300,600 piasters, and expenditures at 1,622,301,600 piasters (the Turkish piaster = 43 cents). For 1887-'88 the revenue was estimated at about 1,750,000,000 piasters. In accordance with an arrangement with creditors of the Porte, an *irade* was issued in 1881 authorizing the emission of certificates to the amount of £92,225,827 sterling for the conversion and consolidation of the Ottoman debt. The capital of the Roumelian railroad or Turkish lottery loan was reduced to £14,211,407, making the total debt £106,437,234 instead of £190,997,980, the amount outstanding previous to the compromise. Since 1882 interest has been paid on the reduced capital at the rate of 1 per cent. per annum from the assigned revenues administered by the committee of foreign bondholders. These revenues are the tobacco and

salt monopolies, the excise and stamp duties, fisheries, silk, and tobacco tithes, duty on Persian tobacco, and the tribute moneys paid by Cyprus and Eastern Roumelia. By the operation of the sinking fund the amount of the debt had been reduced by 1887 to £104,458,706. Debts not entering into the conversion arrangement amounted to about £13,500,000, besides £6,500,000 of new stock issued in 1886 to redeem the floating debt, £32,000,000 owing to Russia as the war indemnity, and internal loans amounting to about £10,500,000. The new Minister of Finance in the autumn of 1891 arranged for a 3-per-cent. loan of £5,000,000, raised at 60 and secured on a monopoly of the *Tumbeki* or Persian tobacco, for the purpose of repaying advances and buying in France two armored cruisers costing 35,000,000 francs.

The Army.—The laws of May, 1880, November, 1886, and February, 1888, make military service obligatory for a period of three years in the regular infantry and four years in the other arms. Conscripts are required to serve with the colors five months, at the end of which they can buy exemption from further service. After the full term of active service has expired the soldiers are enrolled in the reserves for three or two years respectively, then in the *Redif* for eight years, and in the *Mustahfiz* for six years longer. The peace effective of the *Nizam* or regular army is approximately estimated as follows: Officers, 12,000; infantry, 97,200; cavalry, 20,800; field artillery, 9,200 fortress artillerymen; 5,000 engineers; and 8,600 other troops. When the system of conscription goes into full operation it is expected that 800,000 trained soldiers can be placed in the field. The artillery is provided with 1,248 field and mountain guns, and the fortresses contain 2,300 cannons.

The Navy.—The Ottoman fleet of war consisted in 1890 of 7 armored frigates, 8 armored corvettes, 3 imperial yachts, 3 ironclad monitors, 4 unarmored frigates, 2 unarmored corvettes, 1 torpedo catcher, 5 gunboats, 15 transports, and 12 large and 8 small new torpedo boats, besides 2 submarine torpedo boats and 30 of the old type. There are in course of construction 1 ironclad, 3 torpedo cruisers, 1 gun-vessel, 2 corvettes, and 5 sea-going torpedo boats. The period of service in the navy is twelve years, of which five years are passed in the active navy, three in the reserve, and four in the *Redif*.

Commerce.—The total value of imports, as returned by custom-house officials for the year ending March 12, 1890, was 2,010,595,000 piasters, of which 914,514,000 piasters came from Great Britain, 409,144,000 piasters from Austria-Hungary, 254,369,000 piasters from France, 174,323,000 piasters from Russia, 112,420,000 piasters from Bulgaria, 53,001,000 piasters from Persia, 42,438,000 piasters from Italy, 41,574,000 piasters from Belgium, 39,451,000 piasters from Roumania, 29,435,000 piasters from Greece, 9,349,000 piasters from Holland, 6,438,000 piasters from Servia, 6,028,000 piasters from the United States, and smaller amounts from other countries. The total value of the exports was 1,517,243,000 piasters, of which 583,392,000 piasters went to Great Britain, 426,951,000 piasters to France, 125,422,000 piasters to Austria-Hungary, 98,777,000 piasters to Egypt, 68,975,000 piasters to Italy, 52,-

115,000 piasters to Greece, 38,119,000 piasters to Bulgaria, 32,414,000 piasters to Russia, 25,031,000 piasters to Holland, 24,619,000 piasters to Roumania, 15,735,000 piasters to the United States, and 14,682,000 piasters to all other countries. The following were the principal articles of importation and their values in 1888-'89: Grain and flour, 188,639,000 piasters; sugar, 125,951,000 piasters; cotton thread, 107,122,000 piasters; cotton prints, 97,069,000 piasters; coffee, 95,345,000 piasters; cotton and wool stuffs, 68,471,000 piasters; rice, 65,492,000 piasters; animals, 62,496,000 piasters; hides and skins, 52,356,000 piasters; petroleum, 51,356,000 piasters; drugs and colors, 47,754,000 piasters; butter and cheese, 33,092,000 piasters; cloths, 32,400,000 piasters; iron, 29,135,000 piasters; casimir and castor stuffs, 25,752,000 piasters; paper, 25,038,000 piasters; apparel, 20,527,000 piasters; timber, 20,079,000 piasters; leather, 22,930,000 piasters. The values of the principal exports were as follow: Raisins, 201,747,000 piasters; cereals, 134,100,000 piasters; opium, 80,431,000 piasters; raw silk, 80,200,000 piasters; mohair, 60,536,000 piasters; wool, 56,272,000 piasters; oak galls, 54,409,000 piasters; coffee, 53,894,000 piasters; figs, 42,357,000 piasters; olive oil, 40,572,000 piasters; cotton, 36,954,000 piasters; cocoons, 33,338,000 piasters; drugs and colors, 32,534,000 piasters; minerals, 29,113,000 piasters; live animals, 26,796,000 piasters; carpets, 19,628,000 piasters; dates, 17,930,000 piasters; seeds, 15,530,000 piasters; wine, 15,292,000 piasters; beans and lentils, 15,262,000 piasters; butter and cheese, 14,764,000 piasters; nuts and fruit, 13,862,000 piasters; sesame, 13,776,000 piasters; confectionery, 13,574,000 piasters.

Navigation.—There were 174,338 vessels, of 27,581,927 tons, including 35,548 steamers, entered and cleared at the Mediterranean ports in 1887-'88; 3,650, of 538,945 tons, of which 461 were steamers, at the ports of the Red Sea; and 1,173, of 162,159 tons, including 96 steamers, in the Persian Gulf. The merchant navy in 1890 comprised 94 steamers over 100 tons, of 71,607 tons, and 813 sailing vessels, of 158,170 tons.

Communications.—The railroad lines in operation in 1890 in European Turkey had a total length of 904 miles, viz., 210 miles from Constantinople to Adrianople, 152 miles from Adrianople to Saremby, 150 miles from Salonica to Uskub, 75 miles from Uskub to Mitrovitza, 70 miles between Kulleli and Dageaghatche, 65 miles between Tirnova and Jamboli, 64 miles between Banjaluke and Novi, and 118 miles from Zenica to Brod. In Asia a line was running from Scutari to Adabazar, 92 miles in length, lines connecting Smyrna with Seraiskeni, Alasher, and Sevdikeni, and one from Mersina to Adana, the aggregate length completed being 392 miles. The Anatolian Railroad, which is being built with German capital, was completed by May, 1891, and opened to traffic beyond Adabazar as far as Biledshik, 65 miles more. An English company has begun a railroad from Caiffa to Damascus, and another connecting Damascus with Beirut is being built by a French company. In Europe a railroad is being laid to connect Salonica with Monastir.

Creeds and Nationalities.—The population of the immediate possessions of the Ottoman

Government is divided in respect to religion into about 16,000,000 Mohammedans and 6,000,000 Christians. In European Turkey one half of the people are Christians, in the Asiatic territories less than one sixth. The Mohammedan clergy number 11,600. There are 2,120 mosques, and connected with them 1,780 free elementary schools. The revenue of the Evkaf or religious establishment consists of about 20,000,000 piasters received from endowments and 7,000,000 piasters contributed by the state, which pays, moreover, 7,000,000 piasters to the Sheikh-ul-Islam and nearly 8,000,000 piasters for the support of the *naibs* and *muftis*, and gives a large sum annually (13,000,000 piasters in 1880) for the reading of the Koran, and as much more in aid of the pilgrimage to Mecca. The pilgrims in 1889 numbered 139,987, of whom 81,450 arrived by sea. About three quarters of the real property in the cities has been bequeathed to the Vacouf or mosque endowment. The Christians are divided into Greeks, Armenians, Latins or Franks, Syrians and United Chaldeans, Maronites, and Protestants. The last are converts made by missionaries, chiefly among the Armenians. The Franks are adherents of the Roman Catholic Church who have preserved the religion of the old Genoese and Venetian settlers.

The Greek and Armenian patriarchs and the chief rabbi of the Jews exercise a large degree of civil authority. The Greek patriarch was the ecclesiastical head of all the Orthodox Christians of the Turkish Empire until the Servians, Roumanians, and Bulgarians, after obtaining political autonomy, established autocephalous churches, which have gradually encroached on the ecclesiastical domain of the patriarchate within the present limits of Turkey. In resisting the transfer of the investiture of bishops in Macedonia to the Bulgarian exarch, the œcumenical patriarch demanded as compensation that certain rights and privileges held under the ancient ecclesiastical law should be restored to the Church. The Porte granted these concessions, extending considerably the autonomy of the Greek community. The solemnization and dissolution of marriages and the questions of dowries and allowances are to be dealt with by the patriarch and metropolitans, leaving the civil courts and executive authorities nothing to do but to record and enforce their decisions. Wills of Christians are judicially valid when attested by the bishops, and suits concerning wills and guardianship will be tried in the ecclesiastical courts, provided the heirs are members of the Orthodox Greek community and of Turkish nationality. In regard to education the patriarch or metropolitan has the right to decide on the course of study and to appoint teachers, but the Greek schools are subject to the inspection of the state educational authorities. Priests and Jewish rabbis are permitted to testify before their own ecclesiastical authorities, who will report the evidence to the civil courts. Priests arrested for debt will be tried by their ecclesiastical superiors; and when a priest is accused of a criminal offense the magistrate has to notify the bishop, and the latter to produce the accused, who will not be confined with ordinary prisoners pending his trial. These privileges were confirmed by an *irade* issued Feb. 5, 1891.

The Servian Government, in competing for influence in Macedonia with the Bulgarians, has maintained a college in Belgrade in which teachers are trained for work in that province, and has opened schools in places where there are few persons or none at all of Servian blood. They have been especially active in the vilayet of Monastir, and in July, 1891, the Governor-General of Macedonia, Faik Pasha, raised objections to this form of political propaganda. The Greeks, who once claimed as their own all the Christian populations of the Balkan peninsula, have seen the Servians, the Roumanians, and the Bulgarians fall away, and nationalism spring up in Albania. The latest desertion was that of the Zinzares of Monastir, who, owing to their wealth and intelligence, form an important element in the population of Macedonia. About fifteen years ago they learned that they were of Wallachian origin, and from that time they have joined their efforts to those of the Roumanian Government in reviving the Roumanian language and nationality by establishing schools and reading-rooms. The Roumanian Government has lately taken steps to obtain from the Porte for the Roumanians of Turkey the right to have an independent religious administration similar to that conceded to the Bulgarians in Macedonia, and the latter favor the establishment of a Roumanian episcopate at Mitrovitza, because it would be the natural ally of the exarchate in combating the pretensions of the Greek patriarchate and the Servian propaganda. In Albania and Epirus, as well as in Macedonia, the Wallachians, who formerly passed as Greeks, are asserting their nationality, and eagerly embracing the privilege of worshiping in the Roumanian tongue. In the summer of 1891 riotous conflicts took place in Monastir between Wallachians and Greeks, when the former availed themselves of the permission granted by the Porte to use their language in church services. Riots between Roman Catholics and Orthodox Greeks in Jerusalem called forth representations from the French and the Russian ambassadors at Constantinople, who avoided a controversy that might disturb their political co-operation by leaving the Turkish authorities to decide the rights of the case.

The Arnauts of the vilayet of Pristina, in Old Servia, having received no answer from the *vah* to a demand for the restoration of certain ancient privileges, marched 2,000 strong into Drenitza on Feb. 2, 1891, under the leadership of Juril Beg, and after driving out the officials, police, and military, burned the Governor's konak and other Government buildings. Other acts of lawlessness were committed, but the Porte was reluctant to take vigorous measures for fear of provoking a new insurrection in Albania, and merely strengthened the garrisons and prepared for effective military action in case of necessity.

In December the Mallisoris, who had been accumulating Martini rifles through some mysterious channel, which they refused to surrender on the demand of the Turkish authorities, raided villages in the adjacent part of Servia. A league of chiefs was formed by Cassas Effendi for the restoration of the feudal rights to raise and command the troops from Albania. A general amnesty to all persons implicated in the Arne-

nian agitation was proclaimed by the Sultan, and some hundred prisoners were released on Jan. 17, 1891. The amnesty was accompanied with a promise that if, in the future, the Armenians should have any cause of complaint, they would receive justice and satisfaction by appealing to the Sultan through their patriarch.

Brigandage.—On May 30, 1891, a band of brigands, led by Anastasia, a Greek, tore up some rails of the Oriental Railroad at Teherkeskeut, half-way between Adrianople and Constantinople and about 60 miles from Constantinople, upsetting a train. After robbing the passengers they carried off to the mountains those who were traveling in the first-class carriages, who happened to be German tourists, one of whom, a Berlin manufacturer named Israel, they sent back with a letter demanding 200,000 francs. The German embassy promptly sent the ransom, exacting repayment from the Turkish Government. The captives, who were set at liberty after a detention of nine days, were well treated by the bandits, who numbered about 30, all Greeks. For the suppression of brigandage the garrisons in the province of Adrianople were greatly strengthened, and more vigilant commanders and civil officials were appointed. At Ormudja, not far from the place of the railroad robbery, Eugène de Raymond, manager of a large vineyard in the neighborhood, was carried off by another band of Greek brigands, his companion being released in order to convey the message demanding a ransom of 5,000 liras. The Turkish Government, on the demand of the French ambassador, sent the ransom to Thomas, the brigand chief, and secured the prisoner's release. These successes encouraged other robbers. An Italian railroad official on the Salonica-Uskub line of railroad was carried off by brigands. An encounter between brigands who had laid an ambush for a grain merchant and a company of Turkish gendarmes sent in pursuit of them occurred in September, not far from Adrianople, and the brigands were captured after killing several gendarmes. In consequence of the brigand outbreaks the Oriental Railroad Company demanded special guarantees from the Porte.

Change of Ministers.—On March 17, 1891, Agop Pasha, Minister of Finance, resigned and was succeeded by Nazif Effendi, while still remaining Minister of the Civil List. On Sept. 3, 1891, Kiamil Pasha, the Grand Vizier, was dismissed by the Sultan, and all the ministers with him, except those of Marine, Foreign Affairs, and Justice. Djavad Pasha, Governor of Crete, was appointed Grand Vizier, Djemal Eddin was named Sheikh-ul-Islam, and the following ministerial appointments were made: Said Pasha, Minister of Foreign Affairs and President of the Council of State; Riza Pasha, who was commandant at the Yildiz Kiosk, Minister of War; Hassan Pasha, Minister of Marine; H. Rifot Pasha, Governor of Smyrna, to be Minister of the Interior; Ghalib Pasha, Governor of Salonica, to be Minister of Evkafs; Zuhdi Pasha, Minister of Education; Riza Pasha, Minister of Justice; Mahmoud Pasha, Governor of Brussa, to be Minister of Public Works, Commerce, and Agriculture; Nazif Effendi, Minister of Finance; Mikael Effendi Portokul, Minister of the Civil List. On Sept. 10, Mahmoud Pasha having been

appointed Governor-General of Crete, his place in the Cabinet was filled by the appointment of Gen. Tewfik Pasha, ex-Minister to Washington and ex-Minister of Finance, as Minister of Public Works, Commerce, and Agriculture.

The Question of the Dardanelles.—The change of ministry was supposed to indicate an abandonment of the Anglophile policy of Kiamil Pasha in consequence of the Franco-Russian alliance, and a tendency to rely on the Russians and French to back the Porte against England and the central powers in the bolder assertion of the sovereign rights of the Sultan in Egypt and Bosnia and Herzegovina. The first manifestation of this change of attitude was the granting of permission to the steamers of the Russian volunteer fleet to pass through the Dardanelles and convey soldiers destined for or returning from the Russian possessions in eastern Asia. This fleet, of 8 vessels, which are now used as transports between Russia and the penal colony on the island of Saghalien, was first created at the time of the Afghan crisis of 1885, and the vessels were intended to be used as swift cruisers in the expected war with England. As a warning against further concessions to Russia, the English naval forces made a landing at Sigri, on the island of Mitylene, which is near the mouth of the Dardanelles, though not ostensibly as a hostile demonstration. The Porte had issued a circular note refusing permission to foreign war vessels to execute manœuvres within 15 marine miles of the Turkish coast, being influenced by representations made by the Russian ambassador regarding manœuvres carried out by the strong English squadron of 15 vessels collected in Turkish waters on the islands of Samothrace, Lesbos, Lemnos, and Tenedos. Notwithstanding this prohibition, the British admiral, within two weeks, on Sept. 13, landed a force on the islet of Sigri, sank torpedoes in the harbor, and carried out a series of mock naval operations, for which the British ambassador was afterward called upon by the Porte to give an explanation. In a circular sent by the Porte to its representatives abroad concerning the Dardanelles question it was pointed out that the vessels of the Russian volunteer fleet had been running for several years between Odessa and Vladivostock, and had been granted free passage through the Dardanelles, as they sailed under the commercial flag. Because they sometimes carried convicts, with their military guards, and brought back time-expired soldiers, the Turkish authorities had sometimes detained them by mistake. To avoid the possibility of similar misunderstandings in the future, an arrangement had been made with Russia which defined the rights of the vessels under the old treaty, but introduced no new principle.

Insurrection in Arabia.—The Sultan was influenced to adopt the policy of leaning on Russia and France and opposition to England partly by a formidable insurrection that broke out among the Assyrs, the most powerful tribe in the Yemen province, which threatened to spread to all the other tribes of the country. The Arabs in their refusal to acknowledge the caliphate of the Sultan are at all times hostile to the Turks on religious grounds, which have been immensely strengthened in consequence of the British occu-

pation of Egypt. The rebels of Yemen were furnished with repeating rifles and Hotchkiss guns, and as they could only have obtained these through British instrumentality the Sultan suspected that the English Government, for some unknown object, had incited or connived in the uprising. The southwestern province of Arabia, known as Yemen or the vilayet of Sana, is a rich agricultural region, producing the famous Mocha coffee and tobacco of excellent quality, as well as cinnamon and other spices. The people expelled the conquerors in 1630, and Turkish rule was not re-established till 1872. The government of a Turkish vilayet was organized at Sana, and for a time the customs duties collected at Hodeida and Mocha were sufficient to support the local administration and furnish a considerable surplus for the Government at Constantinople. These tariffs, however, hastened the decline of the trade, which had already begun to leave these ports for Aden, and the governors were obliged to levy a land tax and other direct taxes which the people were unwilling to pay. Several local disturbances occurred, and these the pashas were restrained from putting down by energetic means, because the Sultan was anxious to preserve his character as the benevolent caliph of the Arabian tribes. When the spirit of revolt became rampant and the Turkish authorities were obliged to resort to active measures, the military force at their command was insufficient in numbers, and the troops that were there, neglected and unpaid, badly nourished, ragged, and suffering from climatic conditions, had neither the heart nor the ability to perform the service that Turkish soldiers seldom fail in. Thus it happened that Nizams were more than once defeated by Arab tribesmen. In June it was known that the rebellion had reached a serious stage, and that the local forces were beaten and demoralized. The Sultan and his advisers were in consternation, fearing lest the movement should spread to Hedjaz, and the Grand Shereef of Mecca be tempted to head the rebellion and proclaim Arabian independence. Orders were given to dispatch an army of 10,000 men from Syria to the disturbed province. From lack of funds and equipments, it was found to be impossible to mobilize so large a force. Therefore the command was rescinded, and the expedition was limited to two battalions, or 2,000 men, who left Constantinople in steamers, accompanied by 80 cavalry and 150 artillery, with 6 guns. The expeditionary force, though it gained some successes over the Assyrs, proved quite inadequate, and in July the governor, Redjeb Pasha, who had been transferred from Bagdad, where he commanded the troops, to replace Hakki Pasha, sent urgent appeals for re-enforcements. The rebels remained on the defensive and the Ottoman troops were afraid to attack. The soldiers were enervated by the excessive heat and in dread of cholera, which was raging in Hedjaz. Many of the soldiers were Arabs, who sympathized with the insurgents. A column which left Sana on July 19 had several engagements with the rebels, and suffered severe loss on the march to Hadje, which the rebels had laid in ruins. A new *vahi* was appointed, Hassan Edib Pasha, who, with Gen. Ahmed Rushdi Pasha, undertook a movement against Kufle and Hadje,

which was unsuccessful. The whole country north of Sana and Hodeida was in open revolt, and the tribes of the south, with the exception of a part of the Dihama Arabs, were in sympathy with the rebels. Re-enforcements were sent in small detachments. Edib Pasha, with the garrison of 5,000 men, was besieged in Sana by the Sheikh Hamed Eddin at the head of 35,000 armed rebels. Edib Pasha, who had been appointed for the purpose of pacifying, not fighting, the Arabs, was relieved of the command and superseded as vali by Feizy Pasha. Four battalions embarked from Constantinople in steamers, and other transports collected Redifs at Smyrna, Beirut, and Dageaghatch sufficient to complete twelve battalions. The rebels retired from before Sana and Hodeida on the arrival of

the Turkish re-enforcements. In the territory of the Beni Sahar and Housseyn tribes they intrenched themselves in the fortified towns of Barath, El Charab, El Rhail, and Mareb. The Turkish commander-in-chief said that he could not suppress the rebellion with less than 40,000 men. Hamid Eddin returned to the siege of Sana, and demanded as his terms of peace that the whole population should be exempt from taxation for five years, that the exorbitant taxes hitherto collected should then be reduced, that natives should be selected for judges, and that a native of the province should be appointed vali. Though no terms of peace were settled, the siege was again raised. After many weeks of inaction the rebels again marched on Sana, and the Turks made ready to meet them.

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UNITARIANS. American Unitarian Association.—The sixty-sixth annual meeting of the American Unitarian Association was held in Boston, Mass., May 26. The Hon. George S. Hale presided. The treasurer's report showed that 272 churches out of the 426 churches of the Unitarian societies had contributed to the funds of the association about \$54,000. This had all been spent, with the addition of \$20,000 from the general fund, in the prosecution of the work of the society. The report of the Board of Directors spoke of the increasing breadth, variety, and amount of the work of the association, which now included Hungary and Japan, and extended on the American continent from Winnipeg on the north to the Gulf of Mexico on the south. It maintained, warmed, and lighted headquarters in Boston for the use of the whole denomination: furnished its literature to all who asked for it; supported preaching in college towns; kept in existence about twenty old and feeble societies; aided new societies in all stages of their growth; helped young men to enter the ministry; was engaged in work abroad; maintained missionary superintendents in the field; helped the social and reformatory societies connected with the several parishes; managed a church building fund; and promoted educational and civilizing work in the South and among the Indian tribes. The association pays \$500 annually toward the support of a church in Budapesth, Hungary, and the British and Foreign Unitarian Association does the same. This society had grown steadily in numbers and strength, had gathered five "sister churches" around itself, and had within the year erected a fine church building. The mission in Japan had resulted in the formation of a Japanese Unitarian association, of which many of the people had become members. Several religious societies akin to the Unitarian parishes had been gathered, and three Japanese had become preachers of the Liberal faith. The Montana Industrial School among the Crow Indians had fifty-four pupils. Considerable money and a large number of books for work among the colored people, especially at Tuskegee School, had been forwarded during the year.

National Conference.—The fourteenth session of the National Conference of Unitarian and other Christian churches was held at Saratoga, N. Y., September 21 to 24. Mr. George William Curtis presided. The functions of this body are purely advisory, but it is affiliated with the several special organizations and benevolent and missionary enterprises of the Unitarian churches, and receives their reports. Reports were received from the council, reviewing the work of the Unitarian churches at large; from the American Unitarian Association; from the Women's National Alliance; from local superintendents or conferences on church extension; from the Meadville Theological School, Pa.; from the Japan Mission; and from the committee of the Conference on Christian Fellowship. The last committee reported rules for insertion in the by-laws, which were unanimously adopted, directing that "the Fellowship Committee shall include in its scope the extending of fellowship to ministers from other countries coming to America and desiring to engage in ministerial work among our Unitarian Churches," and that "no one admitted by the Fellowship Committee shall be entitled to claim insertion in the list of ministers until after being settled in some parish or other regular ministerial employment for at least one year." The missionary work of the Universalists in Japan was recognized as kindred with that of the Unitarians; assurances of regard and sympathy were conveyed to the ministers and churches of that denomination. The desire was expressed for increased acquaintance and closer co-operation with them, and concurrence was pledged with any arrangements that may be made for co-operation with the Universalist missionaries or the German Liberal brethren laboring in Japan. The next meeting of the conference having been appointed to be held in Chicago during the Exhibition of 1893, a recommendation was made that that session be as far as possible an International Unitarian Conference, in which the co-operation of all foreign Unitarian organizations as well as of those at home was invited. The liquor saloon being declared by resolution the nation's chief source of crime, chief college of corruption in politics,

etc., and no method of dealing with it being regarded as efficient unless those who condemn it consent themselves to abstain totally from the use of alcoholic drink for pleasure, all persons in the denomination were exhorted to become total abstainers and throw the solid influence of the Church against the saloon. The proposed publication of a "Quarterly Review of Religion and Theology" to succeed the present "Unitarian Review" was approved. Memorial resolutions were passed concerning Mr. Justice Samuel F. Miller and the Hon. Hannibal Hamlin.

Unitarian Sunday-School Society.—The annual meeting of the Unitarian Sunday-school Society was held in Fitchburg, Mass., Oct. 28 and 29. The receipts for the year had been \$13,785, and the society held funds to the amount of \$19,785. The society corresponds with Sunday-school workers in the United States and foreign lands; assists new and feeble Sunday-schools; furnishes its publications to Sunday-schools, theological schools, and other institutions, and is publishing a series of Sunday-school texts, of which several thousand copies have been distributed, and a Sunday-school paper.

UNITED STATES. The Administration and the Judiciary.—By the death of William Windom, on Jan. 29, 1891, the post of Secretary of the Treasury was left vacant. On Feb. 7, Secretary Noble held a conference, in Washington, with a delegation of the Sioux Indians who had surrendered. The decision of the President and Secretary of War, sustaining Col. Forsyth's dispositions at the Wounded Knee engagement, was announced on Feb. 12. On Feb. 21 the President sent to the Senate the nomination of ex-Governor Charles Foster, of Ohio, to be Secretary of the Treasury, and that of Martin A. Knapp, of New York, as Interstate Commerce Commissioner. The nomination of Mr. Foster was confirmed on Feb. 24 by a unanimous vote.

The appointments of Senator Blair, of New Hampshire, as minister plenipotentiary and envoy extraordinary to China, of Truxton Beale, of California, as minister to Persia, and of Martin A. Knapp as Interstate Commerce Commissioner, were confirmed by the Senate on Feb. 27. The Secretary of the Navy formally accepted the cruisers "Philadelphia" and "San Francisco" on March 6. On March 7 the President appointed James H. Beatty district judge for Idaho. An order of Gen. Ordway disbanding the colored militia of the District of Columbia was rescinded by the President on March 14.

On March 30 ex-Representative T. H. Carter, of Montana, was appointed Commissioner of the General Land Office. The free-sugar clause of the new tariff act and the new immigration law both went into effect on April 1, and the international copyright law on July 1, when the President issued a proclamation declaring its application to the countries that had fulfilled the specified conditions, viz., Belgium, France, Great Britain, and Switzerland. A decision of Judge Hanford, of the United States district court in the State of Washington, was delivered on Aug. 19, in accordance with which Chinamen entering the United States in violation of the exclusion acts by way of Canada must be returned to Canada, and not to China, as was the practice before. In the beginning of August Joel B. Er-

hardt resigned the post of collector of the port at New York on account of differences with the officials at Washington regarding removals and the details of administration. J. Sloat Fassett, who was appointed to succeed him, resigned also on Sept. 11, having received the Republican nomination for Governor of New York on Sept. 9, and Francis Hendricks was appointed as his successor on Sept. 16. On Sept. 9 ex-Judge Thomas M. Cooley, of Michigan, retired on account of failing health from the Interstate Commerce Commission, of which he had been chairman from the beginning.

On Sept. 18, President Harrison issued a proclamation declaring the lands ceded to the Government by the Indians forming the eastern part of Oklahoma to be open to settlement and homestead pre-emption on Sept. 22, and on that date about 60,000 persons entered the reservation. In October Charles J. Murphy went to Berlin as a special agent of the Agricultural Department for the purpose of calling the attention of the German Government to the food value of Indian corn. On the retirement of Secretary Redfield Proctor, who was appointed by Gov. Paige, of Vermont, to serve out the unex-



CHARLES FOSTER was born near Tiffin, Ohio, April 12, 1828. He was taken as a child of five to this remote settlement where the town of Fostoria now stands, was sent to the Norwalk Academy to be educated, entered on a mercantile career, and when he had become an active and wealthy merchant he interested himself in party politics as a Republican, but sought no public office till 1870, when he allowed himself to be nominated as a candidate for Congress, and was elected through his personal popularity, and three times re-elected, although in his district the Democrats were in the majority. He was appointed on the Committee of Ways and Means, and in this position was instrumental in bringing to light the Sanborn frauds and in securing the repeal of the moiety law. As chairman of the visiting committee in New Orleans to examine into electoral frauds in 1874 he drew up a report denouncing the acts of both parties. In 1879 he was elected Governor of his State, and in 1881 was re-elected, holding office till January, 1884. In his messages to the Legislature he recommended the regulation of liquor selling by high license or local option or its entire prohibition.

He served a term in the United States Senate of G. F. Edmunds, Stephen B. Elkins, of New York, was appointed Secretary of War, and on Dec. 22 his appointment was confirmed by the Senate. He entered on the duties of the office on Dec. 24.

The Post-Office.—The number of post-offices on June 30, 1891, was 64,329, of which 2,942 were presidential and 61,387 fourth-class offices. The post routes had an aggregate length of 439,027 miles, as compared with 427,027 in the preceding year. The post-office revenue during the fiscal year was \$65,931,786, and the expenditure \$71,662,463. The aggregate sum paid in salaries to postmasters was \$14,527,000, and the expenses of transportation of mails were \$36,805,621.



STEPHEN B. ELKINS was born in Virginia in 1841, and when three years old was taken to Westport, now a part of Kansas City. He was educated in the University of Missouri at Columbia, where he was graduated in 1860. Although his father and brother joined the Confederate army, he remained true to the Union, and fought on the Federal side as captain of militia at the battle of Lone Jack. The barbarities of the ferocious guerilla warfare, in which old friends and neighbors were on the opposite side, impelled him to resign his commission. He crossed the plains in 1863 to Albuquerque, New Mexico, and from there he went to Mesilla, where he began to practice law, which he had studied without a preceptor since leaving college, with the intention of practicing in St. Louis. Cases were given to him, and he therefore remained, learned Spanish thoroughly, was elected to the Territorial Legislature in 1864, settled in Santa Fé, obtained a lucrative practice in land cases, and established a bank. In 1873 he was elected a Delegate to Congress, having before that been Attorney-General of New Mexico and United States Attorney for the Territory, in which capacity he secured the application of the law against involuntary servitude to peonage, and sued out writs of *habeas corpus* in the cases of 2,000 persons who were held to service for debt. He won a reputation by his speech in favor of the admission of New Mexico as a State, and his motion was carried in the House of Representatives. He was continued in Congress for another term after which he declined re-election. Settling in New York, he engaged in financial operations in connection with the lands he had acquired in New Mexico, and with coal mines, forests, and railroads belonging to his father-in-law, Senator Davis, and himself in West Virginia. He acquired interests in other railroads, street railroads, and various large enterprises, and had a large share in directing the electoral campaigns of the Republican party, of which he has been a member since its organization in New Mexico.

The Patent Office.—The number of applications filed in the Patent Office during the fiscal year 1890-'91, including 2,333 caveats, was 45,949, of which 39,696 were for new patents, 111 for re-issues, 1,146 for designs, 1,855 for registration of trade-marks, 808 for registration of labels. The number of patents granted, including re-issues and designs, was 25,307, the number of trade-marks registered was 1,744, and the number of labels was 289, making a total of 27,-

340. There were 3,514 patents withheld for non-payment of the final fees. The number of patents that expired during the year was 12,289. The receipts for the twelve months were \$1,502,795, and the expenditures were \$1,145,966.

Public Lands.—During 1890-'91 the number of acres entered under the Homestead act was 5,040,393, and the number taken up under the Timber-culture act 969,006. The vacant lands on June 30, 1891, had a total area of 579,664,683 acres, of which 285,280,251 acres had been surveyed and 294,027,773 were unsurveyed.

The Coast and Geodetic Survey.—Advantage was taken by the Superintendent of the Coast and Geodetic Survey of opportunities afforded by his visit of inspection to the Pacific coast to determine gravity with new and improved apparatus at a number of stations in California, Washington, and Alaska. In compliance with a request from the International Geodetic Association, and with the sanction of the Secretary of the Treasury, an officer of the survey was instructed to proceed to the Hawaiian Islands and aid an officer detailed by that association in observations relating to the variations of latitude. He was further directed to determine simultaneously with latitude the force of gravity at sea level, and also, when practicable, near the summit of Mauna Kea. The demand for the charts of the survey has for some years past exceeded the capacity of the office presses, but new presses and increased working room, soon to become available, will probably enable all public requirements to be met. A new building, more perfectly adapted to the needs of the Coast and Geodetic Survey, Secretary Foster recommended to have erected in Washington.

Pensions.—The disbursements on account of military pensions during the year ending June 30, 1891, were \$118,548,959, against \$106,493,890 in 1890, \$89,131,968 in 1889, \$79,646,176 in 1888, \$74,815,486 in 1887, \$64,584,270 in 1886, \$65,693,706 in 1885, and \$57,273,536 in 1884. The total sum paid out in pensions since 1861 is \$1,277,261,263. The number of pensioners on the rolls on June 30, 1891, was 676,160, of whom 536,811 received invalid pensions and 139,339 were widows and others. The number of claims allowed during the twelve months was 156,486, including 88,611 invalids and 13,776 widows claiming pensions under the act of June 27, 1890, and 336 survivors and 385 widows of veterans of the war with Mexico. The number of applications filed during 1890-'91 was 363,799, in addition to which there were 353,582 applications under the act of June 27, 1890, from persons who were already pensioners or applicants for pensions. The pensioners on the rolls on June 30, 1891, drawing pensions under the general law, included 313,597 invalids and 106,560 widows, etc., of the army, and 45,449 invalids and 2,568 widows, etc., of the navy. Under the act of June 27, 1890, there were 97,137 invalids and 12,209 widows, etc., of the army and 3,976 invalids and 1,436 widows of the navy admitted to the rolls. The number of veterans drawing pensions for services in the War of 1812 was 284, and the number of widows of soldiers of 1812 was 7,590. The pensioners of the war with Mexico numbered 16,379, and the number of pensioned widows was 6,976. There were 20 widows

of soldiers of the Revolution drawing pensions, the youngest seventy-three and the oldest ninety-nine years old. There were 222,521 first payments of pensions during the year, requiring \$38,522,274, which was \$69,592 less than the 130,514 first payments in 1889-'90, the average being \$485 in 1890 and only \$239 in 1891. The first payments on claims under the act of June 27, 1890, averaged \$71.

Indians.—The Indian population, exclusive of natives of Alaska, was 250,483 in 1891. The number of Indian youths enrolled has increased, as has also the average daily attendance in the schools. The Indians have consented, as a rule, to send their children to schools, and it has not been found necessary to take immediate compulsory measures to secure their attendance, as authorized by the act of March 3, 1891.

Political Conventions.—At a conference of representatives of the Farmers' Alliance and industrial organizations held at Cincinnati on May 19, the People's party was founded. Resolutions were adopted convoking a conference of "all progressive organizations" at Cincinnati on Feb. 22, 1892, and a national committee was appointed which was authorized, if no satisfactory coalition with other reform organizations could be effected, to call a convention of the People's party for the nomination of a President, to be held not later than June 14, 1892. On Nov. 23 the Republican National Committee, at Washington, selected Minneapolis for the place of meeting for the national convention and, appointed June 7, 1892, as the date. The National Committee of the Prohibition party met at Chicago on Dec. 17, 1891, and agreed on St. Louis as the place for holding a national convention, which will meet on June 29 and 30, 1892, for the purpose of nominating candidates for the presidency and vice-presidency of the United States.

The following was adopted, on May 20, by the conference at Cincinnati, as the platform of the new third party, to be called the People's party:

That we most heartily indorse the demands of the platforms as adopted at St. Louis, Mo., in 1889, Ocala, Fla., in 1890, and Omaha, Neb., in 1891, by industrial organizations there represented, summarized as follows:

The right to make and issue money is a sovereign power to be maintained by the people for the common benefit, hence we demand the abolition of national banks as banks of issue, and as a substitute for national bank notes we demand that legal-tender treasury notes be issued in sufficient volume to transact the business of the country on a cash basis, without damage or especial advantage to any class or calling, such notes to be legal tender in payment of all debts, public and private, and such notes when demanded by the people shall be loaned to them at not more than 2 per cent. per annum upon non-perishable products, as indicated in the sub-treasury plan, and also upon real estate, with proper limitation upon the quantity of land and amount of money.

We demand the free, unlimited coinage of silver.

We demand the passage of laws prohibiting alien ownership of land, and that Congress take prompt action to devise some plan to obtain all lands now owned by alien and foreign syndicates, and that all land held by railroads and other corporations in excess of such as is actually used and needed by them be reclaimed by the Government and held for actual settlers only.

We demand a just and equitable system of graduated tax on income.

We demand the most rigid, honest, and just national control and supervision of the means of public communication and transportation, and if this control and supervision does not remove the abuses now existing, we demand the Government ownership of such means of communication and transportation.

We demand the election of President, Vice-President, and United States Senators by a direct vote of the people.

The following additional resolutions, not a part of the platform, were also adopted:

That while the party in power in 1869 pledged the faith of the nation to pay a debt in coin that had been contracted in a depreciated currency basis and payable in currency, thus adding nearly one billion dollars to the burdens of the people, which meant gold for the bondholders and depreciated currency for the soldier, and holding that the men who imperiled their lives to save the life of a nation should have been paid in money as good as that paid to the bondholders, we demand the issue of legal-tender treasury notes in sufficient amount to make the pay of the soldiers equal to par with coin, or such other legislation as shall do equal and exact justice to the Union soldiers of this country.

That as eight hours constitute a legal day's work for Government employes in mechanical departments, we believe this principle should be further extended so as to apply to all corporations employing labor in the different States of the Union.

Reciprocity Treaties.—The first treaty of commercial reciprocity concluded in accordance with the clause of the Tariff act of Oct. 1, 1890, providing for the admission into the United States free of duty of sugar, molasses, coffee, tea, and hides in return for reciprocal concessions, was signed with Brazil on Feb. 5, 1891 (see BRAZIL). Arrangements with Great Britain in respect to the free importation of products of Jamaica, the Leeward and Windward Islands, Barbados, and British Guiana were finally concluded in December, 1891. A treaty was concluded with Spain for Cuba and Porto Rico, and promulgated in a proclamation issued by President Harrison on Aug. 1, under which salt meats, lard, hay, resin, cotton, crude petroleum, coal, oats, barley, rye, buckwheat, fruit, lumber, manufactures of iron, sewing machines, and other articles are admitted into those colonies free of duty, and refined petroleum, wheat and flour, boots and shoes, corn, and many other American products at reduced rates of duty. Treaties with Salvador and Guatemala, providing for practical free trade in American products, were signed in December. A liberal arrangement was also made with Santo Domingo. The English treaty goes into effect with British Guiana on March 31, 1892, and with the other colonies two months earlier. In the convention with regard to Jamaica many commodities of prime commercial importance, and in all 63 articles, are exempted from duties, and 12 others are admitted into that island at reduced rates. In the other colonies 58 articles are transferred to the free list, and duties are lowered for 16 others. Negotiations with Germany, France, Belgium, Italy, and other European countries resulted in the removal of the prohibition of pork imports, in consideration of their admission to the reciprocity clause, taken in conjunction with the new meat inspection law. Before the end of the year reciprocity arrangements had been made with all the Spanish

American countries excepting Chili, Colombia, Hayti, Honduras, Nicaragua, and Venezuela, and with European countries with the exception of Austria-Hungary, and of Spain in respect to the Philippine Islands. For countries that do not amend the duties that are considered by the President to be reciprocally unequal and unreasonable before March 15, 1892, raw sugar imported from them is subject to a duty of $\frac{7}{10}$ cent a pound, sugar under 16 and above 13 Dutch standard to $1\frac{1}{2}$ cent, sugar above 16 and under 20 to $1\frac{1}{2}$ cent, sugar above 20 to 2 cents, molasses to 4 cents a gallon, coffee to 3 cents a pound, tea to 10 cents a pound, and hides to $1\frac{1}{2}$ cent a pound. In the reciprocity agreement with Germany the reductions of duty conceded in the new commercial treaties between Germany and the Austro-Hungarian monarchy and Switzerland are extended to the United States also, chief of which are reductions of 30 per cent. on wheat and rye, $37\frac{1}{2}$ per cent. on oats, 11 per cent. on barley, and 20 per cent. on Indian corn, one of 30 per cent. on hogs, 15 per cent. lower duties on butter and fresh pork, and reductions on mill products and on lumber and timber, the latter of from $16\frac{1}{2}$ to 25 per cent.

The New Orleans Affair.—On Oct. 15, 1890, David C. Hennessy, chief of the New Orleans police force, was shot near his own door at night and died without being able to say anything more than that "Dagos" had shot him. Many murders and assaults had been committed by Italians upon each other in New Orleans, and in most cases the perpetrators had escaped detection. Chief Hennessy had been instrumental in the extradition of Esposito, a fugitive Italian bandit, and had more recently been active in arresting and finding evidence against six members of a gang of Italian longshoremen called the Provenzanos, who were awaiting their final trial on the charge of firing from an ambush on a party of Matrangas, another band who were their rivals in the business of unloading fruit steamers. The murder of the police officer caused intense excitement. The working people were hostile to the Italians, who were their competitors in various trades, and all classes were shocked by their many crimes of violence. This last murder confirmed the popular belief that there was a "Mafia" or oath-bound society for assassination. On Nov. 20 the Grand Jury returned an indictment of murder against eleven persons, and eight were indicted as accessories before the fact. The acquittal of the Provenzanos who were tried for shooting the Matrangas, strengthened the general belief that it was impossible to convict Sicilians, because they were bound by oaths to save each other by perjured testimony. The District-Attorney, on Feb. 6, 1891, arraigned six of the persons indicted for the murder of Hennessy and three of those indicted as accessories. A jury was selected from among 1,375 persons, and after a trial during which 67 witnesses appeared for the State and 84 for the defense, a verdict of acquittal was rendered in the cases of six of the accused, two of whom the judge had directed the jury to acquit, and in the other three cases a mistrial was entered. The verdict was denounced as contrary to the evidence, and the jurors were generally believed to have been bribed, a private

detective, D. C. O'Malley, being suspected as the agent of the "Mafia" employed to fix the jury. Members of a committee of 50 appointed to co-operate with the authorities in detecting and bringing to punishment the assassins of Hennessy did much to stimulate the popular frenzy, and on March 14 some of them led a mob which broke into the parish jail and lynched the eleven Sicilians confined there, including those who had been acquitted. On the day of the massacre Baron Fava, Italian minister at Washington, on cabled instructions from the Marquis di Rudini, delivered a written formal protest to Mr. Blaine, who expressed horror at the occurrence. Secretary Blaine telegraphed to Gov. Nichols of Louisiana, urging that the violators of the law should be brought to justice. The Governor in his answer justified the deed. On March 16 Baron Fava had an interview with the Secretary of State, who, in reply to his renewed protest against the inaction of the local authorities, reminded him that the officers of the Federal Government had no constitutional power of interference with the administration of justice in any State, and could do no more than entertain a claim for indemnity. The Italian Premier, who in his first cablegrams had directed Baron Fava to denounce the grave deed to the Government and urge repressive and protective measures, and to protest formally should there be any hesitation, while he reserved for himself the right of asking for proper satisfaction, on receiving a dispatch from Consul Corte in New Orleans saying that the murderers would be handed over to the judicial authorities, telegraphed, on March 19, that it was indispensable that the United States Government should inform him of such action, and instructed Minister Fava to present a demand for indemnity, adding that simple declarations, though cordial and friendly, can not prove as sufficient a satisfaction as can be shown in positive and concrete facts. The claims for indemnity advanced by the Italian Government covered the cases of three of the murdered Sicilians, who were Italian subjects, the others having been proved to be naturalized American citizens, except one other whose Italian citizenship was alleged subsequently. Secretary Blaine asked to have particulars given regarding the families of these three. A letter from Consul Corte to Minister Fava confirmed the impression felt in Italy that the local authorities had been very negligent. Consul Corte said that there were bad men among the Italians who were lynched, but that many of the charges made against them were without foundation. The lynching was foretold and could have been prevented by the removal of the prisoners when a violent anti-Italian demonstration occurred on the evening before, or even if the authorities had ordered the lynchers to disperse when they assembled armed with Winchester rifles. He inferred that the authorities consented to the massacre, if they did not instigate it. When he heard of the meeting of the lynchers he could not find the Mayor, without whose authority, the Attorney-General and the Deputy Sheriff of the prison told him, nothing could be done. He found Gov. Nichols with the commandant of the troops, and when he requested that military or

police be sent to prevent a massacre, the Governor said that he could not act without the Mayor. The massacre then occurred, and the consul and his secretary, who hurried to the prison, were mobbed and assaulted. Baron Fava, on March 21, in a note to Secretary Blaine, who was sick at the time, insisted that the assassins of the Italians should be indicted and that reparation be made to the families of the victims. On March 24 he received a telegram from the Marquis di Rudini saying that public opinion in Italy was impatient; that there could be no question regarding the right of the Italian Government to ask for an indemnity for the murdered men's families and to "ask and obtain the punishment" of the men that had assassinated three Italian subjects who had been declared innocent and discharged by an American magistrate; and that, should a definite decision be delayed, he would be under the painful necessity of openly demonstrating the dissatisfaction of the Italian Government by recalling the minister. On March 25, after receiving a dispatch saying that no further delay could be admitted after the direct and legitimate demands of the Italian Government, he obtained an interview with Secretary Blaine, who said that it was absolutely impossible for the Federal Government to interfere with the administration of justice. Early in the controversy Mr. Blaine pointed out the unreasonableness of the Italian Government in demanding the punishment of the lynchers, since in no civilized government can the executive authority go further than institute judicial proceedings against suspected criminals. This was the function of the municipal authorities of Louisiana, where the courts were open to Italians and Americans alike. This fulfills the conditions of the treaty of commerce and navigation concluded with Italy in 1871, which provides that "the citizens of each of the high contracting parties shall receive in the States and Territories of the other the most constant protection and security for their persons and property, and shall enjoy in this respect the same rights and privileges as are or shall be granted to the natives, on their submitting themselves to the conditions imposed on the natives." In one of his notes he took the ground that "the foreign resident must be content in such cases to share the same redress that is offered by the law to the citizen, and has no just cause of complaint, or right to ask the interposition of his country, if the courts are equally open to him for the redress of his injuries."

In the course of the controversy he treated the subject of indemnification of the families of the murdered Italians by the Federal Government not as a right established by international law, but as a matter open to discussion or the subject of a friendly understanding. In the interview of March 25 he asked if the Italian Government expected the Federal authorities to interfere with the States, expressing astonishment that Baron Fava, who knew the nature of the United States Constitution, should be the bearer of such a demand. The Italian minister said that they hoped that the President and Gov. Nichols would combine in bringing the culprits to justice. The Secretary answered that it was impossible for the Federal Government to act in the matter, where-

upon the Italian minister exhibited a dispatch from the Marquis di Rudini recalling him in case he failed to obtain redress. On the following day another dispatch was received by him authorizing him, in the event of the refusal of the Federal Government to give the assurance that indemnity would be granted and judicial proceedings instituted, to "affirm the intility of his presence near a government that has no power to guarantee such justice as with us is administered equally in favor of citizens of all nationalities." After consulting with the President, Mr. Blaine saw Baron Fava on March 26, and complained that the Marquis di Rudini was hurrying him in a manner contrary to diplomatic usage, and that he could announce no decision until he had investigated the cases of the Italian subjects who were alleged to have been massacred. He said that the Federal Government could not give the assurances demanded. "I do not recognize the right of any government," he said, "to tell the United States what it shall do; we have never received orders from any foreign power, and shall not begin now." He declared that it was "a matter of indifference what persons in Italy may think of our institutions," adding, "I can not change them, still less violate them." He affirmed that the treaty guarantees to Italian subjects the same protection enjoyed by American citizens, and asked if the Italian minister desired that they should have more protection; to which Baron Fava replied that his Government was entitled to demand for Italians in America the same degree of protection that is guaranteed to Americans in Italy. On March 27 the Marquis di Rudini sent an ultimatum announcing the departure of the Italian minister in the event of his failing to obtain a guarantee from the Federal Government that an indemnity would be paid and the culprits tried. He obtained from Mr. Blaine a written declaration acknowledging "the full obligation of the United States as regards full reparation for any violation of the treaty between the two countries which may have occurred," to which was added the explanatory statement that "no full examination of the case had been made, and the law officers of the Federal Government have not arrived at any decision." Deeming this insufficient, he announced his departure on March 31, and took leave of President Harrison, who expressed grief at the incident in New Orleans, and a hope that the guilty parties would be punished.

The Seal Question.—In March, 1891, Mr. Blaine proposed, as a *modus vivendi* that would prevent the destruction of the fur seals of the Pribiloff Islands by Canadian poachers before an agreement could be reached regarding the right claimed by the United States to police Bering Sea and suppress pelagic sealing, that a close season should be declared for the summer of 1891. Pending the decision of the British Government on the subject of a *modus vivendi* the Secretary of the Treasury issued orders to restrict the number of seals to be killed by the lessees of the islands—the North American Commercial Company—to the maximum of 60,000, subject to the discretion of an agent of the Treasury to limit the killing to as small a number as the condition of the herd might demand. Lord Salisbury declined to accept the proposition at

first, as he had when a similar one was made in the previous year, but after long negotiations it was accepted in a modified form, the catch of the North American Company being restricted to 7,500 seals, which they were allowed to kill as compensation for the expense of maintaining the 300 or more natives on the islands. The *modus vivendi*, which was ratified by an act of the British Parliament and the necessary legislative action of Congress, provided that American and British war vessels should jointly patrol Bering Sea and seize sealers of either American or Canadian nationality. The agreement was reached too late, for an unusual number of sealing vessels had already reached the Alaskan waters, and before their operations were stopped had destroyed more seals than in any previous season. The bill giving the British Government authority to forbid the killing of seals by British subjects was read a third time in the House of Commons on June 4, and it was not till after that, and after the United States agreed to rescind the permission allowing 60,000 seals to be killed, and forbade the commercial killing of seals altogether, limiting the number to the 7,500 seals necessary for the natives, that the English Government took steps to forbid and arrest the slaughter. Previous to the acceptance of the *modus vivendi* the British Government had taken steps to have the claim of Territorial jurisdiction over the waters of Bering Sea, beyond the three-mile limit, tested in the United States courts by having a suit brought in the Supreme Court in the case of the sealing schooner "Sayward" that had been seized by the American authorities. The court adjourned the case till October.

The British Government was impelled to accede to a *modus vivendi* by the prospect of a settlement of the Bering Sea question by arbitration. The first proposal to arbitrate had come from Lord Salisbury, and had been rejected by the Secretary of State. On April 14, 1891, Mr. Blaine, in a note to the American minister in London, made a counter-proposition, defining the questions that the United States Government was willing to submit to arbitration as follow:

1. What exclusive jurisdiction in the sea now known as the Bering Sea, and what exclusive rights in the seal fisheries therein, did Russia assert and exercise prior and up to the time of the cession of Alaska to the United States?

2. How far were these claims of jurisdiction as to the seal fisheries recognized and conceded by Great Britain?

3. Was the body of water now known as the Bering Sea included in the phrase "Pacific Ocean," as used in the treaty of 1825 between Great Britain and Russia; and what rights, if any, in the Bering Sea were held and exclusively exercised by Russia after said treaty?

4. Did not all the rights of Russia as to jurisdiction and as to the seal fisheries in Bering Sea, east of the water boundary described in the treaty between the United States and Russia of March 30, 1867, pass unimpaired to the United States under that treaty?

5. Has the United States any right, and, if so, what right, of protection or property in the fur seals frequenting the islands of the United States in Bering Sea, when such seals are found outside the ordinary three-mile limit?

6. If the determination of the foregoing questions shall leave the subject in such position that the con-

currence of Great Britain is necessary in prescribing regulations for the killing of the fur seal in any part of the waters of Bering Sea, then it shall be further determined: First, how far, if at all, outside the ordinary territorial limits it is necessary that the United States should exercise an exclusive jurisdiction, in order to protect the seal for the time living upon the islands of the United States and feeding therefrom. Second, whether a closed season (during which the killing of seals in the waters of Bering Sea outside the ordinary territorial limits shall be prohibited) is necessary to save the seal fishing industry, so valuable and important to mankind, from deterioration or destruction. And, if so, third, what months or parts of months should be included in such season, and over what waters it should extend.

The rights formerly claimed by Russia were defined in a ukase of the Czar in 1821, and were effectually exercised and acquiesced in, although the British and American governments at that time formally protested against treating Bering Sea as *mare clausum*. The convention between the American and Russian governments signed on April 5, 1824, dealt with the rights of navigation and fishery in the Pacific Ocean on the northwest coasts of America. A similar treaty was signed with England on Feb. 16, 1825, in which the region affected was limited to the seas and coasts south of the sixtieth parallel and east of the one hundred and forty-first degree of longitude, as the Russian Government was fearful lest the American treaty should be construed as annulling the principle asserted in the Czar's ukase and conveying to Americans rights and privileges in Alaska and Bering Sea. The Russian minister was instructed to advise the Government at Washington that such was not the intention or effect of the treaty, and the State Department took note of this communication.

The negotiations with regard to arbitration were continued in Washington. On June 25 Mr. Wharton submitted a final dealing with the question of indemnification to prevent the interests of the United States as owner of the seal fisheries from being ignored. Lord Salisbury objected to the proposition as prejudging the question of liability, and on July 13 Sir Julian Pauncefote submitted a form providing that not only the facts, but the liability arising from them, should be passed upon by the arbitrators. Some of the modifications were accepted by Mr. Wharton, acting for the Secretary of State, on July 23. On Aug. 18 Sir Julian Pauncefote asked for a reply regarding the question of indemnity for acts committed by the cruisers of either nation. Mr. Wharton replied that "the President thinks that it will be time to consider the question of indemnity when occasion has arisen to claim the same." The amended form proposed by Mr. Wharton on July 23 was declared on Aug. 26 to be unacceptable to the British Government, because it implied the admission of the doctrine that governments are liable for acts of their nationals, and proposed that questions of fact should be referred to the arbitrators. On the same day Sir Julian Pauncefote complained that the North American Commercial Company was violating the spirit of the *modus vivendi* by killing a greater number of seals than 7,500 on the pretext that the limitation dated from the signature of the agreement. Inquiry was made, and on Oct. 10 Mr.

Wharton wrote that the naval officers and the Treasury agent in Alaska had interpreted the limitation as beginning with the signing of the *modus*. On Sept. 7 Mr. Wharton replied to the note of Aug. 26 that the President did not assume liability on the part of the British Government, but desired to have the question of liability decided by the arbitrators, and that he could not accept the proposition to have questions of fact passed on by the arbitrators, because the facts were well known. The United States Government pressed for a rapid conclusion of the negotiations, since the *modus vivendi* would expire on May 2, 1892. As the British Government insisted on its views regarding damages, Mr. Wharton, Oct. 23, proposed that matters of fact only should be submitted to arbitration, reserving the question of liability for future negotiation. On Oct. 23 Lord Salisbury signified his acceptance of this proposition. On Nov. 23 Sir Julian Pauncefote brought forward a reservation that the necessity and nature of any regulations should be left to the arbitrators, and another stipulating that regulations should not become binding on the United States and Great Britain until they received the assent of the maritime powers. Mr. Blaine declined to consider the proposition, as it would postpone the matter indefinitely, saying that there was no objection to submit the matter to the maritime powers for their assent, but that the United States could not agree to make the adjustment with Great Britain depend on the action of third parties not directly interested in the fisheries. Sir Julian Pauncefote withdrew the first reservation, and in regard to the second suggested that either government should have the right to suspend the regulations if after the lapse of a year it was found that in spite of them injury was being done to the fisheries, the object being to prevent the fisheries from being placed at the mercy of a third power. Mr. Blaine replied that the President apprehended no danger of a third nation engaging in sealing, and suggested that if the agreement was disturbed by a third nation the two governments should act conjointly. Sir Julian Pauncefote replied on Dec. 8 that his Government did not fear that the powers would reject the regulations, but that they would refuse to allow the arrest of their vessels, and that sealing would go on in the close season under other flags. Mr. Blaine adhered to the ground he had taken, and on Dec. 11 Sir Julian Pauncefote withdrew the proposition, reserving the right of raising the question when the matter of the regulations came up before the arbitrators. Mr. Blaine objected to an appeal to the arbitrators on a subject not embraced in the seven articles of the draft treaty. On Dec. 17 the British minister renounced the intention of calling on the arbitrators to decide points not embraced in the articles, and said that he was authorized to sign the seven articles and the articles with reference to a joint commission to investigate the condition of the seals. These commissioners had already been appointed, and had visited the seal islands during the summer of 1891 and made their reports. Further correspondence resulted in an agreement that there should be seven arbitrators, of whom two should be named by the Presi-

dent of the United States, two by the Queen of Great Britain, one by the President of the French republic, one by the King of Italy, and one by the King of Sweden and Norway, all of them to be jurists of distinguished reputation in their respective countries. If the last-named persons failed to designate arbitrators within two months, the vacancy was to be filled in such manner as the parties to the treaty should agree. These stipulations constituted the first article of the draft treaty. The second article provided for the meeting of the arbitrators in Paris within twenty days after each party had presented a counter-case in answer to the other's argument; that each party should be represented by a single person as its agent; and that all questions, including the final decision, should be decided by a majority of the arbitrators. The third article provided that a printed case should be submitted by each party, and that all evidence should be delivered in duplicate to each of the arbitrators and to the agents within three months of the exchange of ratifications. The fourth article relates to the counter-case and additional evidence, to prepare which each party is allowed three months further, with sixty days more of grace on application to the arbitrators. The fifth article required the agents to deliver printed arguments to the arbitrators within a month after the delivery of the counter-cases, and permitted each party to support the same by the oral arguments of counsel. The sixth article recites the question to be submitted to arbitration in the form presented by Mr. Blaine in the first five of his original propositions. The seventh article provided that if the determination of these questions should be in such position that the concurrence of Great Britain is necessary for the establishment of regulations for the protection of seals, the arbitrators should decide what concurrent regulations would be necessary and over what waters they should extend, and on this point they might consider the report of the joint commission; and both parties agreed to co-operate in securing the adhesion of other powers to the regulations. The eighth article states that the contracting parties have been unable to agree on a reference of the question of liability for damages sustained, and declares that they agree to submit questions of fact involved in such claims, and ask for the findings of the arbitrators thereon, while reserving the question of liability for future negotiation. The ninth and tenth articles refer to the joint commission; the eleventh stipulates that the decision of the arbitrators should be rendered, if possible, within three months of the closing of the arguments; the twelfth relates to the division of the expenses of the arbitrators; the thirteenth provides for recording the proceedings; the fourteenth binds the high contracting parties to consider the decision of the arbitrators as a full and final settlement of the questions submitted; and the fifteenth and last provides for the exchange of ratifications within six months of the signature of the treaty, or earlier if possible.

The World's Columbian Exposition.—The first world's fair was held in London in 1851, and out of it grew the Anglo-French commercial treaty of 1852, and the application of free-

trade principles in many succeeding international conventions. A second was held at Paris in 1855, in which there were 20,839 exhibitors, compared with 13,037 in London, where a third exhibition took place in 1862, which attracted 28,653 exhibitors and 6,211,103 visitors. This was in turn surpassed by the Paris Exposition of 1867, in which 50,226 exhibitors took part and 8,805,969 tickets were sold. At Vienna, in 1873, there were about 50,000 exhibitors and 6,740,500 visitors. The sixth world's fair was the Centennial Exhibition at Philadelphia in 1876, which covered 60 acres and drew 30,864 exhibitors and 10,164,489 visitors. When Paris again opened an exhibition, covering about an equal extent of ground, in 1878, the number of exhibitors was 40,366, and the visitors during the one hundred and ninety-four days that it was open numbered 16,032,725. The international exhibition at Sydney in 1879, and that at Melbourne in 1880, were naturally not of the same universal character, and the Glasgow exhibition of 1888 was affected by similar limitations. The next world's fair in the true sense was held at Paris in 1889. It covered about 200 acres, and there were 55,000 exhibits, which were viewed in the course of one hundred and eighty-five days by 28,149,353 paying visitors. The city of Paris gave \$1,600,000 for the enterprise, private persons subscribed \$3,000,000 of capital, and the French Government loaned \$3,400,000 on the security of the permanent buildings, which became the property of the Government when the fair was over.

As a fitting mode of celebrating the four hundredth anniversary of the landing of Columbus on Oct. 12, 1492, it was proposed to have a universal exhibition in the United States. The idea was first taken up by citizens of New York, where subscriptions to the amount of \$5,000,000 were obtained from merchants and capitalists before application was made for the sanction and support of the Federal Government. When the matter came up in Congress the claims of Chicago were considered superior, and a bill was passed and approved on April 25, 1890, entitled "An Act to provide for celebrating the four hundredth anniversary of the discovery of America by Christopher Columbus, by holding an international exhibition of arts, industries, manufactures, and the products of the soil, mine, and sea in the city of Chicago, in the State of Illinois." The act provided for the appointment of commissioners who should organize the exposition. The World's Columbian Commission was constituted under the presidency of Thomas W. Palmer, of Michigan, with Thomas M. Waller, of Connecticut, M. H. de Young, of California, Davidson B. Penn, of Louisiana, Gorton W. Allen, of New York, and Alexander B. Andrews, of North Carolina, as vice-presidents, and John T. Dickinson, of Texas, as secretary. George R. Davis, of Illinois, was nominated director-general of the exposition. An executive committee was appointed, as well as a board of reference and control, a Chicago local board, a board of lady managers, and standing committees to deal with the following branches of the work: Judiciary, rules, and by-laws; tariffs and transportation; foreign affairs; fine arts; science, history, literature, and education; agri-

culture; live stock; horticulture and floriculture; finance; auditing; ceremonies; classification; manufactures; commerce; mines and mining; fisheries and fish culture; electricity and electrical and pneumatic appliances; forestry and lumber; machinery; world's congresses; printing; grounds and buildings. When the organization was completed and the stipulated financial support from the citizens and municipality of Chicago assured, President Harrison, on Dec. 24, 1890, issued a proclamation inviting all the nations of the earth to participate in the World's Columbian Exposition.

Since the time was too short to have the grounds and buildings completed for the summer of 1892, as was originally intended, the opening of the exposition was announced for May, 1893. When the work was fairly begun it was accelerated, as many as 10,000 workmen being employed at one time, in order to have the buildings ready to be dedicated with imposing ceremonies on Oct. 12, 1892, in commemoration of the exact date of the discovery of America. In these ceremonies the President of the United States, the Governors of the States, and the chiefs of the army and civil departments are expected to take part. During the four days devoted to the celebration a military encampment of troops of the regular army, under the command of Maj.-Gen. Nelson A. Miles, and about 10,000 of the National Guard, will be held. A grand review will take place on Oct. 11. On the 12th a salvo of 48 volleys of artillery will be fired at daybreak. The troops will salute the President on his entrance into the main building with officials of the Government and members of the diplomatic corps, representatives of the thirteen original States, and of the rest of the States in the order of their admission into the Union; he will be ceremoniously received, and after musical exercises and the reading of the director-general's report the ceremony of dedication will take place, consisting in the formal presentation of the buildings by the President of the World's Columbian Exposition to the President of the National Commission, and by the latter to the President of the United States, followed by a dedicatory oration and a salute of the batteries, and in the evening by a reception by the President. On Oct. 13 there will be an industrial and civic procession, with historical tableaux, and a ball in the evening, and on Oct. 14 a sham battle in which all the military will take part, and fireworks at night. When the ceremonies are concluded the buildings will be open for the installation of exhibits, for which the exhibitors will have nearly six months.

The site of the Columbian Exposition is Jackson Park, in the southeastern part of Chicago, on the shore of Lake Michigan, and is reached by a steamer trip of 10 miles on the lake. It includes Midway Plaisance, and has an area of 666 acres, the park fronting on the lake for a mile and a half. There will be 12 great edifices, two of which will be twice as large as any ever built for former exhibitions. By the close of 1891 the woman's building was already roofed over, and several others were nearly as far advanced. The most important and hugest structure is the hall for manufactures and liberal arts, which is 1,687 feet long and 787 feet wide, and incloses 44 acres. The ridge of the roof, of glass and

iron, which covers a space of 1,400 by 385 feet, is 150 feet above the earth. A gallery 50 feet wide runs around the outside of the building, and 30 broad stairways lead up to it. The part that is assigned to the liberal arts is ornamented with sculptured reliefs representing the seals of the States. Four archways, 40 feet broad and 80 in height, one in the center of each façade, give entrance to the main building, as well as pavilions forming arched portals at each of the four corners. The loggia surrounding the building is 25 feet wide. The entrances are ornamented with sculptures and mural paintings, and the attic story above the side arches with colossal figures of eagles.

The machinery hall, which is 492 by 845 feet, with an annex 490 by 550 feet, covers 17½ acres. On the lake front, separated by a basin from the building for manufactures and the liberal arts and having the machinery hall directly in the rear, is the agricultural building, 500 feet by 800, in one story 65 feet high, with domed pavilions 96 feet high at each corner surmounted by groups of statuary, and connected by a covered arcade and a central glass dome 100 feet in diameter and 144 feet high. The hall of mines and mining is 700 feet long by 350 broad, built in the Italian style of architecture, with arched entrances ornamented with sculptures, the subjects of which are taken from mining industries. A collection of the various kinds of marble is worked into the facings. The roof is held up by steel cantilever trusses supported by two rows of steel columns 65 feet apart, leaving a space 115 feet wide in the middle and of half that width on either side, running the whole length of the building. The electrical building is in the shape of a cross, having a nave 115 feet wide and 114 feet high and a transept of the same dimensions, and is surmounted by many towers and pinnacles designed for electrical illumination. As Jackson Park is approached by land from the city, through Midway Plaisance, the building directly facing the entrance is the horticultural hall, which is 1,000 feet long and 250 wide. The glass dome in the center is 187 feet in diameter and 113 feet high, admitting of the exhibition of the tallest palms and bamboos. At each corner of the central pavilion are smaller domes, and connecting it with the two end pavilions are greenhouses for the exhibition of plants requiring sunshine, inclosing two courts 88 by 270 feet. Parts of the building will be artificially heated for tropical plants. Alongside is the women's building, designed by Miss Hayden, of Boston, in the style of the Italian renaissance, consisting of a central pavilion and two end pavilions in two stories, connected by arcades. The structure is 400 by 200 feet. A broad staircase gives access to the central pavilion through triple arches ornamented with designs in low relief. Around each pavilion in the second story are open colonnades, and hanging gardens will be placed there. Carriages and appliances for locomotion and transportation will be exhibited in a building 960 by 250 feet, with an annex, the whole space roofed over being 16 acres. It is situated on the other side of the horticultural building from the women's hall, the three occupying the western border of the main lagoon, while the hall of mines stands next

to the transportation building, and next to that the electricity building, which is separated from the hall of manufactures and arts by a canal giving access to the basin opening into the lake through a sheltered artificial harbor. The lake shore runs northwest, and the banks of the canal and lagoon in the same direction, the space between them and the shore being covered by the main hall, and beyond that by the Government building and the grounds surrounding it, to the north of which another canal enters the lagoon from the lake. The agricultural hall fronts the basin, having its longitudinal faces at right angles to those of the main hall and the electricity, mining, and transportation buildings, while the horticultural and women's buildings face east and west. Behind the agricultural building is an annex, 300 by 550 feet, and south of that a handsome hall, 280 by 440 feet, for the assemblage of all persons interested in farming and stock-raising, and for trying and judging animals, which will be exhibited in pens near by covering 30 acres or more. The dairy building for the exhibition of the processes of making cheese and butter and tests of milk is 95 by 200 feet. Next to that, on a basin shut in from the lake by a breakwater, is the forestry building, 200 by 500 feet. The building for the exhibition of the fine arts, 500 by 320 feet, is, like the rest, a temporary structure, but will be made quite fire-proof. The central dome is 125 feet in height and 60 feet in diameter. It is situated at the north end of the park, on the bank of a small lagoon, on the other shore of which is the building for the Illinois State exhibit, and all round are other State buildings. The Illinois building is 450 feet by 160. The building devoted to the general administration (see colored illustration) is between agricultural hall and the mining and electrical buildings. Four pavilions of the same height as these, 65 feet, are surmounted by a structure of equal height and 175 feet square, forming the central rotunda and surrounded by a colonnade 20 feet wide and 40 feet high, with corner domes at the angles, and the whole is capped by an octagonal gilded dome on a base 30 feet high. This is the most ornate of all the buildings. The United States building, 350 by 420 feet, is topped by a larger octagonal dome, 150 feet high and 120 feet in diameter. One half of the building is devoted to the exhibits of the Post-office Department, which has 9,000 square feet; the Treasury Department, which occupies 10,500 square feet; the War Department, occupying 23,000 square feet; and the Department of Agriculture, occupying 23,250 square feet. In the north end the Fishery Commission occupies 20,000 square feet, the Department of the Interior 20,000 square feet, and the Smithsonian Institution the remaining space, while the exhibits of the Department of Justice and of the Department of State will fill the room on the east and west sides of the rotunda. In the exhibit of the Treasury Department, the Mint, the Supervising Architect of the Treasury, the Bureau of Statistics, the Marine Hospital, the Lighthouse Board, the Life-saving Board, and the Coast and Geodetic Survey will all be represented. The exhibit of the Coast Survey includes a relief map of the United States 400 feet broad, showing the cur-



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vature of the earth and heights and depressions in correct proportions. The Navy Department will exhibit a model of one of the new battleships of the same dimensions as the original, with all the armament and appliances and a crew who will go through the drill and tactics of the service. The model, 348 feet long, with 60 feet of beam, is erected on piles in the harbor. The fisheries building is opposite the United States Government building, on the north side of the canal. It will have a length of 1,100 feet and a width of 200 feet, and will contain marine and fresh-water aquaria holding 140,000 gallons, of which 40,000 gallons represent the aquaria for live marine fish, evaporated sea water being supplied by the United States Fish Commission, and restored to its original density by the addition of four parts of lake water to one of the condensed salt water. In the heart of Chicago, on the lake front, a permanent building will be erected to accommodate the numerous world's congresses that will be held during the six months that the Exposition will last, and to remain as a memorial. It will contain two large halls each capable of seating 3,500 people, and 20 rooms for the meeting of sections. A musical auditorium, 160 by 200 feet, costing \$100,000, is to be erected near the horticultural hall. All wooden walls are coated with stucco, a hard plaster that heightens the architectural effect, and is preservative against fire. The cost of preparing the grounds, etc., was estimated in the annual report of the World's Columbian Commission, dated Nov. 25, 1891, at \$4,693,490; the expenses of administration, operating expenses, awards, etc., at \$6,536,963; and the cost of the buildings to be erected by the World's Columbian Commission at \$7,295,000. Under the first head the items are as follow: Grading and filling, \$450,400; landscape gardening, \$323,490; viaducts and bridges, \$125,000; improving water ways, \$225,000; piers, \$70,000; railroads on the grounds, \$500,000; steam plant, \$800,000; electricity, \$1,500,000; statuary, \$100,000; lamps, etc., \$50,000; sewerage, water supply, etc., \$600,000. The cost of the principal buildings was estimated as follows: Manufactures and arts building, \$1,100,000; agricultural, livestock, dairy, and forestry buildings, \$1,000,000; machinery hall, with annex and power house, \$1,200,000; electrical building, \$375,000; hall of mines and mining, \$260,000; transportation building, \$300,000; horticultural building, \$300,000; women's building, \$120,000; art palace, \$600,000; fisheries building, \$200,000; administration building, \$450,000; Government building, \$400,000. The total outlay of the Exposition Company was estimated at \$18,525,453, and the probable receipts were stated to amount to \$23,155,035, including \$5,628,000 of stock subscriptions already obtained, and \$5,000,000 of bonds of the city of Chicago, the gate receipts being estimated at \$10,000,000, the receipts from concessions and privileges at \$1,500,000, salvage at \$1,000,000, and interest on deposits, amounting already to \$27,035, no account being taken of future interest on deposits and further subscriptions which were still being made in considerable amounts. At the time of the report about 60 per cent. of the subscribed capital had been paid in. In order to make up the \$18,500,000

or more that would be required to prepare and equip the grounds and buildings, the Illinois company found it necessary to raise about \$8,000,000 more than they had already. It was proposed to ask Congress for a loan of \$5,000,000 from the United States treasury, and afterward it was decided to apply for a grant or appropriation of that amount. This amended proposition of the Exposition Corporation was approved by the National Commission, and recommended by the President in a message to Congress.

To stimulate interest in the World's Columbian Exposition in Europe and supply information, a commissioner was appointed in London, and a commission made the round of the European capitals in the summer of 1891, while special commissioners were sent to Mexico and other American countries. The appropriations voted by foreign countries for participation in the exposition amount to about \$4,500,000. Among others, the Argentine Republic voted \$100,000; Austria, \$147,000; Bolivia, \$150,000; Brazil, \$550,000; Chili, \$100,000; Colombia, \$100,000; Costa Rica, \$100,000; Ecuador, \$125,000; France, \$400,000; Germany, \$250,000; Great Britain, \$125,000; Guatemala, \$120,000; Honduras, \$20,000; Japan, \$500,000; Mexico, \$750,000; Nicaragua, \$50,000; Norway, \$60,000; Peru, \$100,000; Salvador, \$30,000; British Guiana, \$20,000; British Honduras, \$7,000; Dutch West Indies, \$10,000; Dutch Guiana, \$6,000; Danish West Indies, \$10,000; Ceylon, \$40,000. The first appropriations made by the States and Territories were as follow: Arizona, \$30,000; California, \$300,000; Colorado, \$100,000; Delaware, \$10,000; Idaho, \$20,000; Illinois, \$800,000; Indiana, \$75,000; Iowa, \$50,000; Maine, \$40,000; Maryland, \$60,000; Massachusetts, \$75,000; Michigan, \$100,000; Minnesota, \$50,000; Missouri, \$150,000; Montana, \$50,000; Nebraska, \$50,000; New Hampshire, \$25,000; New Jersey, \$20,000; New Mexico, \$25,000; New York, \$300,000; North Carolina, \$25,000; North Dakota, \$25,000; Ohio, \$100,000; Pennsylvania, \$300,000; Rhode Island, \$25,000; Vermont, \$20,000; Washington, \$100,000; West Virginia, \$40,000; Wisconsin, \$65,000; Wyoming, \$30,000. New Jersey afterward increased its appropriation by \$50,000, Iowa added \$125,000 to the sum first voted, and Massachusetts appropriated \$75,000 more.

The British building will probably be a reproduction of Shakespeare's cottage at Stratford-on-Avon. Germany is expected to present a picture of national life in the form of a German village. Other attractions will be a Pompeian dwelling, a Japanese village, models of the caravels of Columbus and various famous ships, and luminous fountains. The Swiss Government will include in its exhibits a panorama of the Bernese Oberland. There will be a Moorish pavilion and café. A Turkish bazar for the sale of Oriental goods will be opened by a Constantinople firm of merchants. An East Indian village will occupy 200,000 square feet in Midway Plaisance. It is intended to have a bazar of all nations in which the curious products of each will be displayed for sale amid the customary surroundings. A citizen of Cairo, Egypt, has obtained a concession for a realistic repre-

duction of one of the streets of Cairo. There is to be also a special Korean exhibit. An exhibit of the products of Java and the South Sea islands will include a spectacular representation by natives. All private enterprises will be confined to Midway Plaisance. No sales of merchandise for immediate delivery will be permitted in the exposition buildings, nor anywhere on the grounds unless the privilege has been obtained from the Committee on Ways and Means. Among the concessions granted, one is for a moving sidewalk, another for a hydraulic sliding railroad running the whole length of Midway Plaisance, a third for a glass furnace to illustrate the processes of making American glassware, and others for observatory towers and a multitude of other objects. The committee have approved a plan for the erection of a tower modeled after that of Eiffel, but nearly a hundred feet higher. By means of the tracks of the Illinois Central Railroad, lake steamers, elevated railroads, cable roads, and other vehicles, it is expected that 160,000 persons an hour can be carried to and from the exposition. Although the grounds are much more extensive than those of previous world's fairs, there will be abundant facilities for transportation. All the buildings are accessible by water, and on the water-ways, which have a total length of 3 miles, will be gondolas, steam launches, and all kinds of boats. They are equally accessible by means of land vehicles, and tramways and carriages of all kinds will enable visitors to pass from one part of the grounds to another with ease and speed. Goods imported for exhibition and not entered for consumption pay no import duties, and are forwarded to the exposition from any port of entry without examination. The railroad companies have adopted in concert a rule by which foreign exhibits pay the usual freight rates from the seaports to the exposition, but will be returned to the seaboard without any charge unless the ownership has changed. The admission fee will probably be 50 cents, to be paid at the turnstile, without the intermediary of a ticket, in a coin of that denomination.

It is intended to have women and their work and occupations more largely represented than at previous world's fairs. The women's building will contain special exhibits of their handicraft and accomplishments, and there will be examples of training schools for nurses, women's hospitals, kindergartens, cooking schools, educational and literary work of women, their charitable organizations, etc. In the assembly room of the women's building eminent ladies and representatives of the professional and public work of women will give addresses. Conventions and reunions of a majority of the military and civic societies of the country, of the secret orders, and of many of the religious bodies and humanitarian associations, are arranged to be held in Chicago while the exposition is going on. The World's Congress Auxiliary is a board that has been organized for the purpose of inviting to Chicago during the exposition international conventions of the leading representatives in all departments of knowledge, progress, and public activity. Its circular announcement was forwarded to foreign governments by the Department of State, and an appropriation was made by Congress for the

promotion of its object. The following are the officers of the World's Congress Auxiliary: President, Charles C. Bonney; Vice-President, Thomas B. Bryan; Treasurer, Lyman J. Gage; Secretary, Benjamin Butterworth. There is a women's branch, of which the president is Mrs. Potter Palmer and the vice-president Mrs. Charles Henrotin. In many of the departments there are both a committee of men and one of ladies. There are, besides the executive committee, committees on arrangements, places of meeting, education, science and philosophy, literature, the public press, music, artists, commerce and finance, engineering and agriculture, government and law reform, religion, moral and social reform, temperance, labor, and public health and medicine, and these committees are subdivided into as many special committees as there are subjects suitable for a world's congress. In all there are 95 general and special committees. Each committee has issued an address setting forth the objects of the World's Congress Auxiliary and its own special object, and each chooses advisory and corresponding members among leaders in its branch in various parts of the world, and invites their co-operation in organizing a congress and arranging its programme. The active members of the committees are persons who live in Chicago, or near enough to be present at the meetings. The officers of the Board of Lady Managers of the World's Columbian Exposition are as follow: President, Mrs. Potter Palmer; Vice-President-at-Large, Mrs. Russell B. Harrison; Vice-Presidents, Mrs. Ralph Trautmann, of New York; Mrs. Edwin C. Burleigh, of Maine; Mrs. Charles Price, of North Carolina; Miss Katherine L. Minor, of Louisiana; Mrs. Beriah Wilkins, of the District of Columbia; Mrs. Susan R. Ashley, of Colorado; Mrs. Flora Beall Ginty, of Wisconsin; and Mrs. Margaret Blane Salisbury, of Utah. The Board of Reference and Control is under the presidency of Thomas W. Palmer, and the Chicago Local Board has Lyman J. Gage for president.

UNITED STATES CENSUS. The article on this subject in the "Annual Cyclopaedia" for 1890 gave a general outline of the work proposed, with the titles and functions of various divisions organized for systematic execution of the programme laid down in the act of March 1, 1889. General statistics of population were given, with tabular exhibits showing population and rank of States and Territories, together with figures giving comparative statistics concerning population of many cities. Tables summarizing the number of teachers and pupils in public schools for certain of the States and Territories and also for numerous cities were inserted. The number of convicts in penitentiaries, Indians on reservations, the finances of States and cities, colored population of the South, length and motive power of street railways in principal cities, production of pig iron and steel by States, and the coal product in Alabama, Maryland, Pennsylvania, and west of the Mississippi river were included in the article.

Population.—Bulletins have been issued from the Census Office to show the population of minor civil divisions in each of the States and Territories. The only one that needs mention here is that reporting the official count for Alaska.

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STATES AND TERRITORIES.	TOTAL.		25,000 AND OVER.		8,000 AND UNDER 25,000.		4,000 AND UNDER 8,000.		2,500 AND UNDER 4,000.		1,000 AND UNDER 2,500.	
	Number.	Population.	Number.	Population.	Number.	Population.	Number.	Population.	Number.	Population.	Number.	Population.
The United States.	3,715	26,109,074	124	13,989,568	324	4,394,817	457	2,344,911	617	1,918,169	2,198	3,891,669
North Atlantic division.	1,481	12,168,521	56	7,138,050	143	1,976,783	201	1,110,348	348	759,550	888	1,990,955
Maine.....	192	507,103	1	86,125	7	98,921	18	95,922	24	72,336	142	298,499
New Hampshire.....	104	800,807	1	44,126	4	68,932	7	41,196	16	48,265	76	108,828
Vermont.....	116	251,079	..	..	2	26,650	8	48,285	14	42,428	92	194,816
Massachusetts.....	256	2,176,938	10	1,155,200	31	409,781	55	294,969	67	144,554	107	173,684
Rhode Island.....	32	342,122	2	159,779	8	117,792	7	87,764	6	17,675	9	14,112
Connecticut.....	124	682,416	4	212,940	13	178,247	20	114,188	29	90,785	58	92,995
New York.....	255	4,126,782	13	3,153,528	33	446,349	38	295,660	34	165,179	137	214,585
New Jersey.....	77	933,006	7	620,363	13	160,549	10	26,323	14	41,947	54	108,614
Pennsylvania.....	325	2,340,268	12	1,757,180	32	394,862	98	216,556	69	188,790	183	291,871
South Atlantic division.	270	1,966,886	10	1,074,020	26	845,944	25	134,226	58	176,410	131	225,766
Delaware.....	19	82,444	1	61,431	..	..	1	4,010	9	3,061	9	18,342
Maryland.....	34	530,105	1	434,489	3	81,040	2	11,796	7	20,984	21	31,896
District of Columbia.....	1	234,392	1	230,392	..	..	..	..	..	..	..	..
Virginia.....	43	811,529	2	116,552	7	105,706	5	26,739	11	34,917	18	28,808
West Virginia.....	24	104,627	1	24,522	2	18,516	2	13,968	5	14,350	14	23,262
North Carolina.....	44	156,885	..	..	5	62,544	7	34,515	6	18,790	26	40,026
South Carolina.....	37	154,466	1	54,955	2	29,900	1	5,544	11	34,383	22	30,544
Georgia.....	54	306,429	3	142,022	4	57,147	5	27,580	10	30,923	32	48,507
Florida.....	21	90,059	..	..	3	47,081	2	16,274	7	20,463	9	12,701
North Central division.	1,375	8,699,300	36	4,249,543	116	1,544,058	172	950,593	212	667,472	330	1,287,320
Ohio.....	226	1,670,925	9	907,970	20	251,872	41	223,542	37	115,213	119	175,928
Indiana.....	186	704,231	4	221,802	14	178,764	19	106,567	26	82,506	73	114,192
Illinois.....	241	1,958,948	8	1,172,868	21	313,587	23	119,513	32	102,514	162	250,566
Michigan.....	150	858,314	4	340,315	16	267,730	19	106,436	24	77,703	87	128,029
Wisconsin.....	113	668,636	2	229,558	15	194,988	18	98,280	15	45,692	63	100,175
Minnesota.....	67	560,936	3	391,009	8	38,366	6	35,776	11	37,658	44	66,821
Iowa.....	135	541,071	4	145,982	8	124,148	11	64,233	23	71,691	89	135,957
Missouri.....	126	981,869	3	630,810	5	66,993	21	107,825	16	49,117	81	121,184
North Dakota.....	8	20,646	..	..	..	..	2	10,643	..	..	6	10,068
South Dakota.....	17	44,830	..	..	1	10,177	..	..	6	18,878	10	16,575
Nebraska.....	55	335,103	2	195,606	6	63,442	2	14,283	8	17,469	39	61,909
Kansas.....	101	378,691	2	69,323	7	96,556	10	57,795	16	48,227	66	106,450
South Central division.	375	1,917,195	18	825,511	24	821,278	34	192,143	65	200,651	239	377,609
Kentucky.....	63	412,525	2	198,500	5	77,954	9	49,155	10	31,104	37	55,312
Tennessee.....	53	304,843	3	169,768	2	92,574	3	17,465	7	21,179	33	39,372
Alabama.....	41	186,802	2	57,264	2	31,881	6	34,752	9	28,313	32	34,567
Mississippi.....	40	114,004	..	..	3	34,098	3	17,187	6	18,791	28	43,933
Louisiana.....	57	314,555	1	242,039	2	22,467	..	..	7	22,821	17	27,398
Texas.....	114	444,327	4	182,881	7	92,965	11	64,274	21	62,866	71	119,191
Oklahoma.....	4	10,214	..	..	..	..	1	4,151	1	2,738	2	3,275
Arkansas.....	33	169,965	1	25,874	3	29,849	1	5,189	4	12,747	24	36,806
Western division.....	214	1,357,722	9	761,244	15	206,869	25	127,606	39	121,703	126	200,860
Montana.....	14	50,680	..	..	2	24,537	..	..	4	14,230	8	11,393
Wyoming.....	8	29,656	..	..	1	11,020	1	6,888	1	3,466	5	6,172
Colorado.....	29	212,505	1	106,718	3	46,082	3	13,792	6	17,918	16	26,003
New Mexico.....	9	28,188	..	..	..	..	1	6,185	1	3,785	7	13,798
Arizona.....	8	17,924	..	..	..	..	1	5,150	1	3,192	5	9,022
Utah.....	19	97,899	1	44,843	1	14,880	2	9,724	2	5,699	13	22,744
Nevada.....	7	21,941	..	..	1	5,511	..	..	2	7,513	4	5,017
Idaho.....	2	3,485	..	..	..	..	..	..	..	..	2	3,485
Washington.....	26	152,033	2	78,848	1	19,922	5	22,100	2	6,313	16	24,835
Oregon.....	16	94,137	1	46,395	1	10,532	2	11,312	6	18,423	6	9,044
California.....	76	655,474	4	424,460	5	70,626	10	50,954	14	48,424	43	60,070

The total population is reported as 31,795, including 19,130 males and 12,665 females. This number embraces persons under the following classifications: White, 3,860 male, 443 female; mixed (descendants of intermarriage between Russians and native women), 885 males and 934 females; Indian (comprising the following tribes: Eskimo, Thlinket, Athabaskan, Aleut, Tsimpsian, and Hyda), 11,987 males and 11,287 females; Mongolian (including Chinese and Japanese), 2,287 males (no females); all others, 111 males and 1 female.

Places having 1,000 Inhabitants or more.—The facts under this heading can better be stated in tabular form than in text. According to the present census there were in 1890 3,715 places of

1,000 inhabitants or more, having a total population of 26,109,074, and representing 41.69 per cent. of the total population of the United States. In 1880, 77 places had a population of 25,000 or more; in 1890, 124 places; over 8,000 in 1880, 286, 1890, 448; over 4,000 in 1880, 580; in 1890, 905. The tables on following pages give results in detail by States and Territories for each geographical division, both as regards number and population, and in the following order as to size: 25,000 and over, 8,000 and under 25,000, 4,000 and under 8,000, 2,500 and under 4,000, 1,000 and under 2,500.

Special Classes. Insane.—The total number of insane persons treated in public and private institutions (1880) was 97,535. In 1881 the num-

ber was 56,205. This shows an increase in the nine years of 41,330 or 73.53 per cent. "This percentage of increase, when compared with the percentage of increase of population in the last decade, namely, 24.86, does not indicate an increase in the proportion of insane persons to population, but rather a great increase in the amount of asylum accommodation provided and a willingness on the part of the public to make full use of all the facilities thus provided." The figures for the actual number of insane in the United States can not be determined until the work of comparing and eliminating all duplicate reports of cases has been completed and the results tabulated.

In 1889 there were 38 private institutions for the treatment of insane—25 in the North Atlantic States, 12 in the North Central States, and 1 in the South Atlantic division. Taking institutions giving complete reports of expenditures, the total annual cost per head for treatment (1889) was \$161. From 1871 to 1880 the average was \$184.

Schools for the Deaf.—In 1889 there were 6,596 pupils in the public schools for the deaf, including 3,791 males and 2,750 females. There were 43 such schools. Statistics for 11 private schools are given in the census report. They contain (1889) 135 males and 141 females. From institutions giving complete reports it is gathered that the average annual cost per pupil in the public schools, including both building and current expenditures, was \$271 in 1889 against \$252 from 1880 to 1889. The average annual number of pupils in attendance from 1880 to 1889 was 5,910.

Schools for the Blind.—The total number of pupils (1889) was 2,931. In 1880 the record shows 2,041, being an increase of 890. "The apparent increase is due to some extent to the increased facilities for the reception and education of the blind in the schools established for this purpose." The total given includes 1,578 males and 1,319 females, as against 1,064 males and 955 females in 1880. The total expenditures for 1889 are given as \$744,763, including \$169,090 for building purposes.

Pauperism and Crime. *Convicts in Penitentiaries.*—The number of convicts (1890) is returned as 45,233, the ratio of the convicts to each million of the population being 722. In 1880 there were 30,659, or, including the leased prisoners, 35,538. The ratio in 1880 was 709 in each million, the increase between 1880 and 1890 being 13. It is noted in the report that crime of a serious character is "rather on the decline than on the increase." The total number of convicts (1890) include 30,546 whites, 23,094 being native, 7,267 foreign born, and 185 nativity unknown. The reports show 1,791 female convicts.

A table of sentences exhibits the fact that (1890) 5,175 convicts were sentenced to 1 year's imprisonment; 7,684, 2 years; 5,333, 3 years; 3,080, 4 years; 6,990, 5 years; 4,180, 6 to 9 years; 5,658, 10 to 19 years; 1,657, 20 years and over; and 2,688 for life. Considering the most severe sentences, only 140 females were sentenced from 10 to 19 years; 29 for 20 years and over; and 119 for life.

Prisoners in County Jails.—According to the returns for 1890, there were 19,538 prisoners

when the returns were prepared. In 1880 the number was 12,691. This shows an increase of 6,847, or 53.95 per cent. The figures for 1890 include 13,961 white and 5,577 colored. Of these, 5,328 were negroes, 131 Chinese, and 118 Indians. The negroes consisted of 4,427 pure negroes and 901 mulattoes or negroes of mixed blood. Of the aggregate number of prisoners (which is 19,538), 1,737 were women.

Inmates of Juvenile Reformatories.—The total number of inmates (1890) is given as 14,846, compared with 11,468 in 1880. Of the total, (1890) 11,535 are boys and 3,311 are girls. The percentage of girls is somewhat larger than it was ten years ago. There are shown to be a little more than five times as many girls' in reformatories, in proportion, as there are women in penitentiaries.

Paupers in Almshouses.—The aggregate number of inmates (1890) is reported as 73,045, as against 66,203 in 1880, the increase in the decade being 6,842. The total (1890) includes 32,304 females. The number of males, white, is given as 37,887; number of males, colored, 3,354; number of females, white, 29,191; number of females, colored, 3,113. Of the aggregate, by age, 2,555 are under 5 years of age; 1,783 from 5 to 9 years; 1,289 from 10 to 14 years; and 1,623 from 15 to 19 years of age. Details concerning the aged give 345 male inmates between 90 and 94 years; 80 between 95 and 99; 40 between 100 and 104; 16 between 105 and 109; 6 between 110 and 114; 5 between 115 and 119; and 1 between 120 and 124 years of age. Aged female inmates include 51 that were between 100 and 104 years of age; 18 between 105 and 109; 9 between 110 and 114; 6 between 115 and 119; 2 between 120 and 124; and 2 between 125 and 129 years of age.

Education.—Statistics for the public schools of 1890, in States not published when the last volume of the "Annual Cyclopædia" was issued, are given below:

STATES AND TERRITORIES.	PUBLIC SCHOOLS.			
	TEACHERS.		PUPILS.	
	Male.	Female.	Male.	Female.
Alabama.....	4,009	2,282	151,567	151,882
Arkansas.....	3,487	1,579	116,172	106,899
Colorado.....	622	1,754	33,450	52,640
Delaware.....	228	475	15,576	15,558
Florida.....	1,288	1,339	46,050	45,138
Georgia.....	4,000	3,568	172,979	169,553
Idaho.....	181	208	6,948	7,368
Illinois.....	6,859	16,407	897,138	881,192
Indiana.....	6,727	6,553	261,308	245,871
Iowa.....	5,460	21,107	251,751	241,486
Kansas.....	4,890	7,370	204,997	194,325
Kentucky.....	4,381	4,391	207,920	199,647
Michigan.....	3,561	12,429	217,368	209,664
Minnesota.....	2,114	6,893	145,242	136,517
Mississippi.....	3,641	3,745	175,756	174,893
Missouri.....	6,117	7,678	316,228	304,086
Nebraska.....	2,861	7,694	124,052	116,248
Nevada.....	41	210	8,720	8,667
New Jersey.....	822	8,643	114,167	119,905
New Mexico.....	310	162	11,898	6,377
New York.....	5,353	26,345	522,702	519,458
North Dakota.....	557	1,337	16,455	14,866
Oregon.....	1,111	1,455	32,312	31,042
Tennessee.....	5,165	3,211	234,016	221,716
Texas.....	6,705	4,392	193,450	217,459
Utah.....	317	363	18,856	17,516
Washington.....	656	954	27,624	27,798
West Virginia.....	3,483	2,008	101,399	91,903

CITY.	Teachers.	PUPILS.	
		White.	Colored.
Allegheny, Pa.	278	15,947	....
Alpena, Mich.	80	1,549	....
Amsterdam, N. Y.	42	2,689	....
Anderson, Ind.	17	1,180	....
Atlantic City, N. J.	85	1,795	140
Augusta, Ga.	71	2,171	1,687
Augusta, Me.	44	1,875	4
Bangor, Me.	98	3,052	....
Battle Creek, Mich.	49	2,187	63
Bay City, Mich.	87	4,156	83
Bayonne, N. J.	54	2,193	15
Beverly, Mass.	43	1,754	19
Bloomington, Ill.	77	3,416	75
Boston, Mass.	1,980	67,746	1,052
Bridgeport, Conn.	149	7,702	134
Bridgton, N. J.	31	1,927	78
Brookline, Mass.	67	2,007	....
Burlington, Iowa	82	4,099	100
Burlington, Vt.	55	1,740	....
Cambridge, Mass.	251	10,335	....
Camden, N. J.	177	10,633	490
Charlotte, N. C.	27	908	592
Chicago, Ill.	2,842	184,327	1,224
Chicopee, Mass.	35	1,781	....
Chillicothe, Ohio.	51	1,547	208
Cincinnati, Ohio.	766	35,059	1,600
Cleveland, Ohio.	694	37,219	423
Clinton, Mass.	38	1,654	....
Colorado Springs, Col.	31	1,812	....
Columbus, Ga.	44	1,234	1,210
Columbus, Ohio.	235	12,461	....
Covington, Ky.	66	3,674	844
Danbury, Conn.	52	3,929	51
Danville, Va.	82	689	810
Denison, Tex.	25	1,168	307
Denver, Col.	214	13,645	374
Des Moines, Iowa.	184	7,627	77
Detroit, Mich.	491	28,916	....
East Portland, Ore.	28	1,478	1
Eau Claire, Wis.	62	3,177	....
Elizabeth, N. J.	77	4,299	121
El Paso, Tex.	16	798	61
Fitchburg, Mass.	63	3,720	5
Fort Smith, Ark.	38	1,492	496
Freeport, Ill.	40	1,652	....
Fresno City, Cal.	30	1,386	....
Galveston, Tex.	90	3,071	851
Gloucester, Mass.	104	4,137	....
Grand Rapids, Mich.	228	10,702	....
Hartford, Conn.	189	7,648	....
Haverhill, Mass.	95	3,779	53
Hoboken, N. J.	120	6,449	4
Holyoke, Mass.	108	4,798	....
Houston, Tex.	61	1,938	1,422
Hyde Park, Mass.	41	1,993	....
Ironton, Ohio.	40	2,219	....
Jackson, Tenn.	21	897	616
Jacksonville, Ill.	40	1,725	116
Jamestown, N. Y.	77	2,720	....
Janeville, Wis.	43	1,653	....
Jersey City, N. J.	493	21,738	561
Johnstown, Pa.	25	1,540	....
Joliet, Ill.	65	3,580	....
Kansas City, Kan.	104	4,877	800
Keokuk, Iowa.	52	2,096	221
Kingston, N. Y.	71	3,998	68
Lansingburg, N. Y.	44	1,731	....
Laredo, Tex.	10	727	56
Leadville, Col.	22	990	63
Lebanon, Pa.	39	2,212	....
Lima, Ohio.	50	2,482	....
Lincoln, Neb.	96	5,200	159
Lockport, N. Y.	54	2,730	....
Long Island City, N. Y.	105	6,403	....
McKeesport, Pa.	59	2,093	....
Madison, Wis.	47	1,989	....
Malden, Mass.	89	3,676	16
Manchester, N. H.	75	3,783	4
Manistee, Mich.	51	2,648	1
Marinette, Wis.	31	1,950	....
Marlborough, Mass.	54	2,372	8
Memphis, Tenn.	197	3,544	2,529
Menominee, Mich.	30	1,735	....
Millville, N. J.	41	1,804	29
Milwaukee, Wis.	460	27,787	....
Minneapolis, Minn.	569	20,592	....
Montgomery, Ala.	89	1,123	684
Muscatine, Iowa.	51	2,013	10

CITY.	Teachers.	PUPILS.	
		White.	Colored.
Nantucket, Pa.	27	1,471	....
Natchez, Miss.	27	528	750
Nebraska City, Neb.	32	1,232	19
Newark, N. J.	443	24,364	873
New Bedford, Mass.	135	5,496	260
New Britain, Conn.	45	4,065	....
New Brunswick, N. J.	53	2,402	83
Newburgh, N. Y.	38	3,244	23
New London, Conn.	54	2,692	56
Newport, R. I.	50	2,295	210
Newton, Mass.	107	4,563	....
Oakland, Cal.	154	9,472	18
Ogdensburg, N. Y.	77	1,812	....
Orange, N. J.	47	1,863	131
Paducah, Ky.	33	1,903	616
Passaic, N. J.	39	1,991	65
Paterson, N. J.	224	11,743	281
Pittsburg, Pa.	618	31,014	....
Pittston, Pa.	25	1,406	6
Portland, Ore.	90	4,278	14
Pottstown, Pa.	43	2,190	15
Providence, R. I.	394	18,271	....
Quincy, Mass.	66	3,287	....
Racine, Wis.	60	3,013	10
Rockford, Ill.	73	3,755	25
Saginaw, Mich.	172	7,552	14
St. Paul, Minn.	454	16,922	129
Salem, Mass.	102	4,076	35
Salt Lake City, Utah.	68	4,684	....
San Antonio, Tex.	76	3,685	722
San Diego, Cal.	62	3,498	78
San Jose, Cal.	54	3,077	22
Schenectady, N. Y.	70	2,405	51
Seattle, Wash.	65	4,599	22
Sheboygan, Wis.	41	2,405	....
Sioux City, Iowa.	96	4,577	10
South Bethlehem, Pa.	27	1,487	13
Spokane Falls, Wash.	40	2,784	....
Stamford, Conn.	52	1,975	....
Stillwater, Minn.	42	1,737	19
Stratford, Ill.	43	2,280	12
Syracuse, N. Y.	287	13,401	....
Taunton, Mass.	98	4,378	....
Tiffin, Ohio.	32	1,415	6
Toledo, Ohio.	218	10,577	....
Trenton, N. J.	137	6,514	121
Troy, N. Y.	71	7,712	....
Union, N. J.	31	1,662	....
Waltham, Mass.	62	2,137	8
Watertown, N. Y.	65	2,439	....
West Bay City, Mich.	57	2,337	....
West Troy, N. Y.	29	1,633	....
Wheeling, W. Va.	117	5,446	163
Wilkesbarre, Pa.	113	6,236	....
Wilmington, Del.	175	8,093	1,151
Winona, Minn.	60	2,993	....
Worcester, Mass.	321	14,757	176
Youngstown, Ohio.	76	4,210	121
Zanesville, Ohio.	80	3,355	....

Social Statistics of Cities.—Interesting details are given in a census bulletin under this heading. It is stated that, taking 225 of the principal cities, 10,885 miles of streets are paved, out of a total of 35,723 miles. The average annual cost for construction and repair of streets (aggregated) is \$25,256,551. In 309 cities there are (1890) 293,847 lamps, 182,671 gas, 53,696 electric, and 57,480 oil, etc. The total police force for 253 cities is 20,738. They make 742-112 arrests annually (average). The cost of the force is given as \$17,329,160. In 268 cities the total fire-department force is 36,875, the average annual cost (aggregated) being \$11,001,323.

Religion.—The statistics of religious denominations are not complete, but figures have been given for several organizations, some having membership in each State, and others scattered here and there throughout the country. The following table will give an idea of the

membership* and value of church property in 1890:

DENOMINATIONS.	Members.	Property.
United Presbyterian Church.....	94,432	\$5,408,084
Church of the New Jerusalem.....	7,095	1,886,455
Salvation Army.....	5,662	87,350
Advent Christian.....	29,516	405,005
Seventh-day Baptists.....	9,123	264,010
Christian Church, South.....	15,004	187,000
Evangelical Adventists.....	1,147	61,400
Catholic Apostolic.....	1,394	66,050
Life and Advent Union.....	1,015	16,700
Seventh-day Baptists (German).....	194	14,550
General Sixth Principle Baptists.....	987	19,500
Schwenkfeldians.....	805	12,200
Theosophical Society.....	605	600
Brethren in Christ.....	2,080	57,750
Cumberland Presbyterian.....	164,940	3,515,511
Later-day Saints.....	144,352	325,506
Reformed Episcopal.....	8,455	1,615,101
Moravian Church.....	11,781	651,250
German Evangelical Synod of North America.....	187,482	4,614,490
German Evangelical Protestant, of North America.....	86,156	1,187,450
Plymouth Brethren.....	2,279	.....
Roman Catholic.....	6,250,045	119,381,516
Greek Catholic (Uniates).....	10,550	63,300
Russian Orthodox.....	13,504	220,000
Greek Orthodox.....	100	5,000
Armenian Church.....	335	.....
Old Catholic.....	605	33,820
Reformed Catholics.....	1,000	.....
Mennonite Church.....	17,073	317,045
Bruderhof Mennonite Church.....	352	4,500
Amish Mennonite Church.....	10,101	76,450
Old Amish Mennonite Church.....	2,083	1,500
Apostolic Mennonite Church.....	200	1,200
Reformed Mennonite Church.....	1,635	52,650
General Conference Mennonites.....	5,670	119,350
Church of God in Christ.....	471	1,600
Old (Wisler) Mennonites.....	610	8,015
Rundes Conference (Mennonite).....	1,333	11,350
Defenseless Mennonites.....	856	10,540
Mennonite Brethren in Christ.....	1,113	39,600
Brethren or Dunkards (Conservative).....	61,101	1,121,541
Brethren or Dunkards (Progressive).....	8,039	145,770
African Methodist Episcopal Church.....	452,725	6,462,280
Wesleyan Methodist Connection.....	16,492	898,250
African Union Methodist Protestant Church.....	3,415	54,440
Independent Churches of Christ in Christian Union.....	18,214	294,450
Temple Society.....	340	15,300
Church of God.....	22,511	643,185
Reorganized Church of Jesus Christ of Latter-day Saints.....	21,778	226,285
Communist societies:		
Society of Shakers.....	1,729	36,800
Amara Society.....	1,600	15,000
Bruderhof Mennonite Society.....	332	4,500
Harmony Society.....	250	10,000
Society of Separatists.....	200	8,000
New Icaria Society.....	21	.....
Society of Altruists.....	25	.....
General Synod.....	164,640	8,919,170
United Synod in the South.....	37,457	1,114,065
General Council.....	317,145	10,996,736
Synodical Conference.....	357,153	7,504,313
Independent Lutheran bodies:		
Joint Synod of Ohio, etc.....	69,505	1,689,087
Buffalo Synod.....	4,242	84,410
Hauge's Synod.....	14,730	214,395
Norwegian Church in America.....	53,452	806,825
Michigan Synod.....	11,482	164,770
Danish Church in America.....	10,181	129,700
German Augsburg Synod.....	7,010	111,060
Danish Church Association.....	8,493	44,775
Icelandic Synod.....	1,991	7,200
Immanuel Synod.....	5,580	94,200
Suomal Synod.....	1,385	12,893
United Norwegian Church of America.....	119,972	1,544,455
Independent Congregations.....	18,096	580,125
Reformed Church in America.....	92,970	10,340,159
Reformed Church in the United States.....	204,018	7,975,583
Christian Reformed Church.....	12,470	428,500
Orthodox Jewish Congregations.....	57,597	2,802,050

* According to priority of publication.

DENOMINATIONS.	Members.	Property.
Reformed Jewish Congregations.....	72,899	6,952,225
Friends (Orthodox).....	80,655	2,795,784
Friends (Hicksite).....	21,992	1,661,850
Friends (Wilburite).....	4,329	67,000
Friends (Primitive).....	232	16,700
Reformed Presbyterian (Synod).....	10,574	1,071,400
Reformed Presbyterian (Gen'l Synod).....	4,602	469,000
Reformed Presbyterian Covenanted.....	87	.....
Reformed Presbyterian in the United States.....	600	75,000
Associate Church of North America.....	1,053	29,200
Associate Reformed Synod of the South.....	8,501	211,850
Spiritualists.....	43,030	573,650

Finance. *United States.*—The debt of the United States (less sinking fund) as a unit, distinct from States and Territories (1890) is reported by the Census Office as \$915,962,112. The amount in 1880 was \$1,922,517,364. The decrease thus given is \$1,006,555,252. The bonded debt in 1890 is shown as \$711,313,110; floating debt (less cash in Treasury), \$204,649,002. The total debt, less sinking fund, *per capita* (1890) according to the foregoing figures, \$14.63. In 1880 the *per capita* was \$38.33. It is noted that the public debt for the years named "is in each case the debt less cash in the Treasury, as reported by the Treasury monthly debt statement, exclusive of the amount of bonds issued to the Pacific railroads and that of interest accrued on the public debt, but not matured."

State.—The aggregate debt of the States and Territories (less sinking fund)—these States and Territories being considered as units, distinct from counties, cities, towns, and other minor civil divisions—in 1890 is stated to have been \$223,107,883, against \$290,326,643 in 1880, the decrease being \$67,218,760. The bonded debt, aggregated (1890) is reported as \$223,128,544; floating debt, \$47,804,012; sinking fund, \$47,824,673. The *per capita* of total debt, less sinking fund (1890), is \$3.56. In 1880 the *per capita* was \$5.79.

"The indebtedness of the several States includes the amount for which bonds have been issued and are outstanding, amount due by the States to school or other funds (whether bonds have been issued or not), the arrearages of interest, and all indebtedness of a temporary nature as far as reported. The sinking fund, for which credit is given, consists only of such an amount of cash, bonds, or stocks as has been specifically set apart by law as a sinking fund for the redemption of the debt at its maturity."

County.—The aggregate debt of the counties (less sinking fund)—these counties being considered as units, distinct from cities, towns, and other minor civil divisions—in 1890 is reported as \$141,950,845, against \$124,105,027 in 1880, showing an increase of \$17,845,818. The bonded debt, aggregated (1890), is reported as \$131,124,056; floating debt, \$16,090,693; sinking fund, \$5,263,904. The *per capita* of total debt, less sinking fund (1890), is \$2.27. In 1880 the *per capita* was \$2.47.

Municipal.—The census bulletin on municipal finance was issued in November, 1890. At that time it was possible to include only 858 cities in the statement. The returns from cities gave figures for 1889-'90. Details by States appeared in the "Annual Cyclopædia" for 1890.

The aggregate debt of 858 municipalities in 1889-'90 was \$745,949,786, compared with \$695,494,741 in 1880, the increase being \$50,455,045. In these comparisons the same cities are included for each year. The bonded debt (1889-'90) was \$720,665,551; floating debt, \$25,384,235; sinking fund, \$147,181,191; total available resources including cash in treasury, \$290,575,846.

In a census bulletin showing receipts and expenditures of 100 principal cities the following aggregates under important headings are given: Receipts from taxes, \$139,283,226; liquor licenses, \$11,782,307; incomes from funds and investments, \$10,852,461; loans, \$84,352,668. Expenditures for libraries, \$818,202; schools, \$26,198,173; fire, \$11,865,402; health, \$2,280,317; lighting, \$7,747,313; police, \$17,817,435; charitable objects, \$7,166,901; streets and bridges, \$33,580,209; sewers, \$6,943,519; buildings and improvements, \$9,715,070; parks and public grounds, \$12,672,494; salaries, \$11,833,458; water works, \$19,086,751; interest on debt, \$32,250,368; loans, \$59,488,191; balance cash on hand at end of year, \$36,579,193.

Assessed Valuation.—For the three decades ending in 1880 the estimated true value of all property and the value of real estate and personal property as assessed, including the assessed valuation as returned in 1890, was as follows: 1860, assessed valuation, \$12,084,560,005, estimated true valuation, \$16,159,616,068; 1870, assessed, \$14,178,986,732, estimated true, \$30,068,518,507; 1880, assessed, \$16,902,993,543, estimated true, \$43,642,000,000; 1890, assessed, \$24,249,580,804. The increase in assessed valuation since 1880 is returned as \$7,346,596,261. The assessed valuation *per capita* (1890) is \$387.62, not including Oklahoma, as compared with \$337.01 in 1880. The increase per cent. of assessed valuation is 43.46, the increase per cent. of population being 24.86.

Agriculture. Hops.—The production of hops (1889) is reported by the Census Office as 39,171,270 pounds, grown upon 50,212 acres of land in 17 States. The 5 leading States are New York, Washington, California, Oregon, and Wisconsin. The aggregate production of these 5 States (1889) was 38,965,920 pounds, being 99.48 per cent. of the entire crop. The crop of 1890 amounted to 36,872,854 pounds, valued at \$11,105,424, or nearly three times the value of the crop of 1889. The average price of hops in 1889 was about 10 cents per pound. In 1890 it was over 30 cents.

Truck Farming.—It is stated in a census bulletin that more than \$100,000,000 are invested in this industry, the annual products reaching a value of \$76,517,155 on the farms after paying freights and commissions. This amount was realized (1890) upon 534,440 acres of land. The persons employed in truck farming included (1890) 216,765 men, 9,254 women, and 14,874 children, aided by 75,866 horses and mules, and \$8,971,206.70 worth of implements. The leading vegetables grown upon truck farms are asparagus, beans, cabbage, kale, spinach, Irish potatoes, beets, celery, cucumbers, water-melons, other melons, peas, sweet potatoes, and tomatoes.

Truck farming is distinct from market gardening, and is so considered in the figures just given, the former only being included. Truck farming

is carried on in favored localities at a distance from market, water and rail transportation being necessary. Market gardening is conducted near local markets, "the grower of vegetables using his own team for transporting his products direct to either the retailer or consumer."

Floriculture.—It is noted in a special census report that, "while floriculture has been carried on as a business in this country for upward of one hundred years, it is only within the past twenty-five years that it has assumed large proportions. Out of a total of 4,659 establishments, 2,795 were started between 1870 and 1890, and of these, 1,797 between 1880 and 1890." There are (1890) 312 commercial floriculture establishments owned and managed by women: These 4,659 establishments use 38,823,247 square feet of glass, covering more than 891 acres of ground. The value of establishments, including fixtures and heating, is placed at \$38,355,722.43; tools and implements, \$1,587,093.03. There are employed 16,847 men and 1,058 women, earning (1890) \$8,483,657. The expenses for fuel are given as \$1,160,152.66. The products (1890) were 49,056,253 rose bushes, 38,380,872 hardy plants and shrubs, and 152,835,292 of all other plants. The total value of these products is reported as \$12,036,477.76. An additional income of \$14,175,328.01 was realized from cut flowers. It is mentioned that in addition to the Society of American Florists there were (1890) 965 State and local floral societies and clubs and 358 horticultural societies.

Viticulture.—The several grape-growing districts of the United States (1889) utilized 307,575 acres in bearing vines, producing 572,139 tons of grapes, of which 267,271 tons were table grapes and 240,450 tons were used for producing wine, making 24,306,905 gallons; 41,166 tons for raisins, making 1,372,195 boxes of 20 pounds each; and 23,252 tons for dried grapes and purposes other than table fruit. The industry represents a total value in land, improvements, machinery, and appurtenances of \$155,661,150. In 1889, 200,780 persons were employed.

Irrigation.—There are reports available under this heading concerning Arizona, Idaho, Montana, Nevada, New Mexico, and Utah. For Arizona an area is shown of 65,821 acres. This represents the area on which crops were raised by irrigation in the year ending June 30, 1890. The figures for the other divisions are as follow: Idaho, 217,005 acres; Montana, 350,582 acres, not including 217,000 acres irrigated for grazing purposes; Nevada, 224,403 acres, not including 280,000 acres for grazing land; New Mexico, 91,745 acres; Utah, 263,473 acres. The number of farms irrigated in the foregoing States and Territories are, respectively, 1,075, 4,323, 3,706, 1,167, 3,085, and 9,724.

Horses, Mules, and Asses on Farms.—According to the census returns, there were "on hand," June 1, 1890, 14,976,017 horses, 2,246,936 mules, and 49,109 asses. The increase of horses from 1880 to 1890 is reported as 44.59 per cent., as against 44.95 per cent. between 1870 and 1880, and 14.34 per cent. between 1860 and 1870. The increase of mules between 1880 and 1890 was 26.66 per cent.; between 1870 and 1880 the increase was 61.08 per cent., while from 1860 to 1870 there was a decrease of 2.24 per cent.

Live Stock on Ranges.—In June, 1890, there were upon the ranges, according to the reports, 517,128 horses, 5,433 mules, 14,109 asses or burros, 6,828,182 cattle, 6,676,902 sheep, and 17,276 swine. The sale of horses (1889) amounted to \$1,418,205; cattle, \$17,913,712; sheep, \$2,669,663; swine, \$27,132. The total number of men reported upon ranges in charge of this stock is 15,390. It is noted that a large portion of Texas, Colorado, Oregon, Washington, and California, one third of Kansas, and one half of Nebraska have been converted into farms during the last decade. The statistics for farms are not included in the figures just given.

Nurseries.—The number of nurseries in the United States (1890) is given as 4,510, valued at \$41,978,835.80, and occupying 172,806 acres of land, with an invested capital of \$52,425,669.51. Employment is given to 45,657 men and 2,279 women. The number of animals used is given as 14,200. The value of implements for the propagation and cultivation of trees and plants is shown as \$990,606.04. The grand total of plants and trees (1890) is estimated as 3,386,855,778. Of this number, 518,016,612 are fruit trees; 685,603,396 grape vines and small fruits; and the balance are nut, deciduous, and evergreen trees, hardy shrubs, and roses. The largest acreage (20,232.75) is devoted to apple trees.

Seed Farms.—There were in the United States (1890) 596 farms, with a total of 169,851 acres, devoted exclusively to seed growing, of which 96,567.4 acres were reported as producing seeds. Beans were cultivated on 12,905 acres; cabbage, 1,268 acres; beets, 919 acres; cucumbers, 10,219 acres; celery, 71 acres; sweet corn, 15,004 acres; field corn, 16,322 acres; squashes, 4,663 acres; peas, 7,971 acres; musk-melons, 5,149 acres; radishes, 662 acres; and tomatoes, 4,356 acres.

The total value of farms, implements, and buildings is reported as \$18,325,935.86. In 1890 13,500 men and 1,541 women were employed.

Tropic and Semi-tropic Fruits and Nuts.—In a special report under this heading the number of acres of bearing and non-bearing trees and plants (1889) was 271,428; number of bearing trees and plants, 28,101,036; value of product (1889), \$14,116,226. The estimated number of acres suitable for planting tropical fruits and nuts is given as 24,710,879. According to the number of acres utilized, the orange ranks first (184,003), pecan second (27,419), and the almond third (13,515).

Manufactures. Distilled Spirits.—The number of proof gallons of distilled spirits consumed in the arts, manufactures, and medicine (1889) is reported as follows: Alcohol, 6,745,152; cognole spirit, 1,453,048; high wines, 75,992; whisky, 2,023,900; brandy, 266,874; rum, 189,581; gin, 222,295. The aggregate of proof gallons, as stated above, is 10,976,842.

Iron and Steel.—A report on the production of the cast-iron-pipe foundries (1890) shows that there are 36 establishments with a capital of \$14,300,933, including \$68,500 reported by two establishments not in operation in 1890. The total number employed (1890) is shown as 7,788, receiving \$3,794,407 in wages. The cost of material is set down as \$9,483,389, and the value of products as \$15,168,682. The principal material

consumed was pig iron, the quantity being 591,258 net tons, costing \$7,860,408. The output of iron piping (1890) was 513,030 tons of 2,000 pounds, valued at \$12,556,315.

A report has been issued on the product of iron and steel in the New England States. In 1890 there were 35 establishments, as against 61 in 1880 and 48 in 1870. The capital invested (1890) is given as \$13,415,450; 1880, \$11,560,408; 1870, \$5,909,000. The number of workmen (1890) was 6,645; 1880, 8,654; 1870, 3,815. The value of product (1890) is stated to be \$15,105,441; 1880, \$14,558,627; 1870, \$10,824,603.

Mines and Mining.—A recent report on the mineral products of the United States divides the 55 varieties of minerals named in the tables into metallic and non-metallic. The total value of the product for 1889, with figures for 1880 to facilitate comparison, with percentages of increase, are shown in the following tables:

PRODUCTS.	1880.	1889.	Increase, 1889 over 1880.	Per ct. of in- crease.
Metallic.....	\$190,089,565	\$269,590,457	\$79,500,892	41.86
Non-metallic.....	178,279,185	807,640,175	184,861,040	77.54
Unspecified minerals....	6,000,000	10,000,000	4,000,000	66.67
Total.....	\$369,319,000	\$887,230,632	\$217,911,632	59.00

Coal.—Of the bituminous coal mined in 1880, the total quantity is given as 38,242,641 long tons, and in 1889 as 85,383,059 long tons, the increase being 123.27 per cent. The total quantity of anthracite coal mined in 1880 was 25,580,189 long tons. In 1889 it was 40,714,721 long tons, or an increase of 59.17 per cent. The table gives the amount of coal marketed from 1882 to 1889 inclusive, with value in each class for every year named:

YEARS.	BITUMINOUS.		ANTHRACITE.	
	Quantity.	Value.	Quantity.	Value.
1882.....	57,963,085	\$72,453,797	29,120,096	\$65,520,216
1883.....	65,080,171	78,086,205	31,793,027	71,534,311
1884.....	66,809,556	70,140,824	30,718,293	61,436,556
1885.....	69,569,284	80,640,564	32,265,421	72,274,544
1886.....	68,390,119	75,554,029	32,764,710	71,555,126
1887.....	75,454,404	84,280,752	35,278,442	79,365,244
1888.....	67,602,534	98,114,588	39,216,572	72,557,213
1889.....	65,723,110	72,878,794	35,863,280	63,463,572

Pig Iron.—It is noted in the bulletin that the product of pig iron increased in the last decade more than twofold, viz., from 3,375,912 long tons in 1880 to 7,603,642 in 1889. This was valued, using the price of No. 1 anthracite pig iron at Philadelphia, at \$89,315,569 in 1880 and \$120,000,000 in 1889. The limestone used for flux tributary to this industry amounted to 4,500,000 tons in 1880, worth \$3,800,000, and to 6,318,000 tons in 1889, worth \$3,159,000.

Iron Ore.—The product of iron ore in 1880 amounted to 7,120,362 long tons, valued at \$23,156,957, and in 1889 to 14,518,041 long tons, valued at \$33,351,978.

Aluminum.—Aluminum was not reported in 1880, 1881, and 1882; in 1883 the quantity reported was 83 pounds, valued at \$875, or \$10.54 per pound; the product increased in 1884 to 150 pounds, in 1885 to 283 pounds, in 1886 to 3,000 pounds, valued at \$9 per pound; in 1887 the

product was 18,000 pounds, valued at \$3.28 per pound; in 1888 the production was 19,000 pounds; and in 1889 the quantity produced rose to 47,468 pounds, valued at \$97.335, or \$2.05 per pound. The reduction in the price of this metal was continued, so that at the present time the price is lower than \$1 per pound.

Copper.—The product of copper in 1880 amounted to 60,480,000 pounds, and in 1889 to 231,246,214 pounds; increase, 282.35 per cent.

Lead.—In 1880 the quantity of lead produced was 97,825 short tons, and in 1889 182,967 short tons, an increase of 87.04 per cent. During this period the percentage of desilverized lead has increased from 71.60 to 84.01 per cent.

Zinc.—The total product in 1880 was 23,239 short tons, and in 1889 58,860 short tons. The great increase in production is fairly well distributed over the producing States.

Quicksilver.—The product has declined from 50,926 flasks of 76.5 pounds net, worth in San Francisco \$1,797,780, to 26,484 flasks, worth \$1,190,500. The supply, which practically all comes from California, is not maintained even at increased prices.

Nickel.—This product amounted to 329,968 pounds in 1880, and to 252,663 pounds in 1889. The competition from nickel contained in Canadian copper matte is serious.

Gold and Silver.—The production of gold has decreased from \$36,000,000 in value in 1880 to \$30,000,000 in 1888, and in the other years has fluctuated between these extremes. In 1889 the value of \$32,886,744 represents a slight decline from the previous year. Silver, on the other hand, has increased from \$39,200,000 comparatively steadily to \$66,390,988. In the case of both silver and gold the coining values are given, \$20.6718 for gold and \$1.2029 for silver per troy ounce.

Mineral Waters.—The number of gallons of mineral waters sold in 1880 was 2,000,000, while in 1889 there were 12,780,471 gallons sold, an increase of 539.02 per cent.

Petroleum.—Petroleum varied from 26,286,123 barrels of 42 gallons in 1880, with slight fluctuations each year, and in 1889 showed a production of 35,163,513 barrels, the total amount during the decade being 278,092,712 barrels.

Natural Gas.—Returns show the value of natural gas produced in 1889 to be \$21,097,099, the first report of the production being in 1882, when the amount was valued at \$215,000.

Minor Minerals.—With the exception of the following minor minerals, all the remaining productions named show a greater or less increase in quantity—mica, marl, flint, crude barytes, feldspar, chromic-iron ore, and asbestos.

Fish and Fisheries.—Statistics of the whale, fur-seal, and sea-otter fisheries show that the total capital invested in all branches of the industry (1889) was \$2,081,636; the pelagic whale fishery using \$1,013,275; the shore whale fishery, \$15,604; and the fur-seal and sea-otter fishery, \$152,757. The whale fishery employed 101 vessels, aggregating 22,660.39 net tons, valued, with outfits (including apparatus and repairs), at \$1,791,173. When compared with the report for 1880 this shows a decrease of 40.94 per cent. in the number of vessels, a decrease of 41.35 per cent. in the total net tonnage, and a decrease of

38.06 per cent. in the value of the vessels and outfits, including apparatus and repairs. The total value of the products landed in 1889 was \$1,834,551, of which the whale fleet reported \$1,689,927, the shore fishery \$19,641, and the fur-seal and sea-otter industry \$124,983. When compared with the report for 1880 this shows a decrease of 36.46 per cent. in the value of the products of the whale fleet. The total number of persons employed in the whale fishery was 3,017, in shore whaling 74, and in the fur-seal and sea-otter fishery 422, making a grand total of 3,513. The whale fleet was distributed over the whaling ground as follows: Bering Sea and Arctic Ocean, 42; Atlantic Ocean, 36; Okhotsk and Japan Seas, 9; South Pacific Ocean, 8; Indian Ocean, 6. By hailing ports the distribution was as follows: New Bedford, Mass., 57; San Francisco, 27; Provincetown, Mass., 9; Edgartown, Mass., 3; New London and Stonington, Conn., 2 each; and Boston, 1. Of the fur-seal and sea-otter fleet, 11 vessels hailed from San Francisco, 7 from Port Townsend, Wash., 1 from Santa Barbara, Cal., and 1 from Salem, Mass.

It is reported that the products of the fisheries of the Pacific States in 1889 amounted to \$6,387,803 in value, the capital invested being \$6,498,239. It is shown in the exhibits that the fisheries of California are more important than those of either Oregon or Washington. Of the persons engaged in the fisheries of these States 5,338, or 38.54 per cent., are to be credited to California. Of the capital invested, \$2,684,210, or 41.31 per cent., represented California interests, and of the value of products, \$4,463,369, or 69.87 per cent., accrued from the sale of fish and other marine objects taken by the citizens of that State. The fisheries of Oregon rank next in importance to those of California, giving employment to 4,682 persons, or 33.81 per cent. of the total number engaged in the three States, the capital invested amounting to \$2,296,632, or 35.34 per cent., and the products yielding \$1,033,574, or 16.18 per cent. There were engaged in the industry in Washington 3,880 persons, or 27.65 per cent. of the aggregate number of employees in the Pacific fisheries. The amount of investment was \$1,517,397, or 23.35 per cent. The value of the catch was \$890,860, or 13.95 per cent. The canning of salmon is the most important fishery industry in the Pacific States, and the capture of salmon in many places is wholly dependent on and tributary to the canning business. Of the 63 factories, 8 were located in California, 24 in Oregon, and 21 in Washington. The quantity of fresh salmon utilized in the preparation of the canned product was 41,632,228 pounds, for which the fishermen received \$1,783,227. The canned goods consisted of 622,037 cases, worth \$3,703,888.

Transportation. Railroads.—Figures representing eight groups of States have been made public, but the totals for the United States have yet to appear in tabular form.

Group 1 includes the New England States.

Group 2 includes New York, New Jersey, Pennsylvania, Delaware, Maryland, and part of West Virginia.

Group 3 includes Ohio, Indiana, southern peninsula of Michigan, and parts of Pennsylvania and New York.

Group 4 comprises Virginia, West Virginia, North Carolina, and South Carolina.

Group 5 includes Kentucky, Tennessee, Mississippi, Alabama, Georgia, and Florida.

Group 6 includes Illinois, northern peninsula of Michigan, Minnesota, Wisconsin, Iowa, North Dakota, South Dakota, and Missouri.

Group 7 includes Nebraska, Montana, and Wyoming, and parts of North Dakota, South Dakota, and Colorado.

Group 8 includes Missouri south of Missouri river, Arkansas, Kansas, Indian Territory, Colorado south of Denver, and New Mexico north of Santa Fé.

Group 9 includes Louisiana, Texas, and part of New Mexico.

Group 10 includes California, Oregon, Washington, Idaho, Nevada, Arizona, Utah, and part of New Mexico.

GROUPS.	Passengers carried.	Total earnings and income.	Expenditures.	Miles operated.
Group I.... 1880.	52,221,888	\$49,001,720	\$46,915,222	6,021
1889.	103,374,387	69,475,555	65,309,681	6,942
Group II.... 1880.	81,730,119	202,206,732	187,849,894	14,685
1889.	189,079,005	282,206,855	274,221,065	18,020
Group III.... 1880.	27,749,647	104,467,129	96,426,802	14,624
1889.	55,456,445	154,298,880	149,173,772	22,241
Group IV.... 1880.	2,628,535	14,295,887	12,508,597	4,954
1889.	9,498,325	81,215,108	81,711,469	8,423
Group V.... 1880.	8,766,539	32,721,623	30,509,777	8,273
1889.	20,567,472	71,846,115	69,526,099	16,532
Group VI.... 1880.	22,324,192	120,710,326	118,605,573	23,568
1889.	61,726,554	206,286,979	208,223,175	41,299
Group VII.... 1880.	909,881	21,201,316	17,936,867	2,541
1889.	4,845,449	89,804,567	85,279,578	8,288
Group VIII.... 1880.	2,907,262	85,766,157	86,161,536	6,923
1889.	11,843,176	77,597,801	75,942,078	16,859
Group IX.... 1880.	994,565	18,272,089	11,159,861	8,084
1889.	5,547,108	37,927,672	36,473,892	8,844
Group X.... 1880.	8,642,510	29,968,487	28,605,111	4,868
1889.	20,466,945	61,442,219	64,099,884	11,164

On the Great Lakes.—In a bulletin on freight traffic the tonnage has been divided into four classes, viz.: Products of agriculture, products of mines and quarries, other products, manufactures, miscellaneous merchandise, and other commodities. The products of mines and quarries give 54.22 per cent. of the total shipping industry, lumber gives 23.84 per cent., and the products of agriculture, 16.50 per cent., leaving the miscellaneous carriage small. The excess of shipments over receipts in the class of mines and quarries was 854,800 tons, and of agriculture 366,330 tons, while the excess of receipts of lumber was 1,508,859 tons, and of manufactures and miscellaneous merchandise, 377,554 tons. Including all the traffic on the Great Lakes, 669,158 tons of all classes of merchandise were received in excess of shipments.

The average distance for which freight on the Great Lakes is carried is 566 miles. From this it appears that the total ton mileage on the Great Lakes for the season of 1889 amounts to 15,518,360,000 ton miles. The aggregate ton mileage of railways for the year ending June 30, 1889, was 68,727,223.146.

Floating Equipment.—The number of vessels on the Great Lakes Dec. 31, 1889, was 2,784; the gross tonnage 924,472, and the net tonnage 780,119. The estimated carrying capacity of these 2,784 vessels was 1,254,271 tons, and the commercial valuation was \$48,809,750.

UNITED STATES, FINANCES OF THE.
The receipts and expenditures of the United States for the year ending June 30, 1891, compared with those of the year previous, may be classified and compared as follows:

RECEIPTS.			
SOURCES.	1890.	1891.	
Internal revenue	\$142,606,705 81	\$145,586,249 44	
Customs	229,665,584 57	219,522,205 23	
Sales of public lands	6,358,272 51	4,020,585 41	
Tax on circulation of national banks	1,801,326 56	1,286,042 60	
Repayment of interest by Pacific railways	705,691 52	823,904 04	
Sinking fund for Pacific railways	1,842,564 52	2,326,359 37	
Customs fees, fines, penalties, and forfeitures ..	1,299,324 52	966,121 82	
Fees, consular and lands ..	1,799,070 59	1,714,526 03	
Proceeds of sales of Government property	192,128 99	259,379 05	
Profit on coinage of silver dollars	9,385,416 57	6,221,888 42	
Profit on other coinage ..	881,827 68	1,450,656 40	
Revenues of District of Columbia	2,809,180 93	2,558,597 74	
Tax on seal skins	262,500 00	269,673 83	
Fees on letters patent	1,347,021 78	1,305,255 81	
Miscellaneous	2,670,821 11	8,917,805 07	
Total net receipts exclusive of public debt ..	408,080,982 63	392,612,447 81	
Public debt, principal	245,238,650 00	873,298,867 75	
Total	\$648,374,632 63	\$765,821,305 06	

EXPENDITURES.			
PURPOSE.	1890.	1891.	
Congress	\$6,498,052 70	\$7,108,460 80	
Executive department	11,298,880 23	12,526,569 07	
Judiciary	4,849,092 06	5,808,080 77	
Foreign intercourse	1,648,276 59	2,023,715 26	
Improving rivers and harbors	11,787,437 83	12,250,627 28	
Other expenses, military establishment	32,845,400 25	86,469,487 78	
Constructing new war vessels	6,831,808 03	10,609,197 15	
Other expenses, naval establishment	15,174,403 21	15,504,699 81	
Indians	6,795,046 67	8,527,469 01	
Pensions	106,936,855 07	124,415,951 40	
Construction of public buildings, including sites	4,877,949 92	4,811,522 16	
District of Columbia	5,677,419 52	5,685,510 61	
Premiums on bonds purchased	20,304,224 06	10,401,220 61	
Interest on public debt ..	36,099,284 05	37,547,135 37	
Miscellaneous	47,555,005 42	72,138,999 82	
Total net expenditures, exclusive of public debt ..	318,040,710 66	865,773,905 85	
Public debt, principal	312,206,367 50	865,352,470 87	
Total	\$630,247,078 16	\$731,126,376 22	

The surplus revenues of the Government for the year ending June 30, 1891, were \$37,239,762.57, that amount being the excess of ordinary receipts over ordinary payments, excluding payments on account of premiums on bonds purchased. To this amount was added \$54,207,975.75, deposited in the Treasury under the act of July 14, 1890, for the redemption of national-bank notes; \$9,363,715, an additional amount received during the year on same account; \$13,810 received for 4-per-cent. bonds issued for interest accrued on refunding certificates converted during the year; and \$34,132,372.16 taken from the cash balance in the Treasury, making a total of \$134,947,635.48, which was expended for loans and redemption of national-bank notes, as follows:

Redemption of bonds and notes for sinking fund, including \$3,880,086.28 premiums.....	\$47,566,197 65
Sundry old loans.....	193,695 00
National bank notes.....	28,500,208 50
Purchase of funded loan of 1891 (4 per cents).....	50,286,150 00
Purchase of funded loan of 1907 (4 per cents).....	26,507,250 00
Premiums thereon.....	6,541,194 83
Total.....	\$134,047,035 43

The ordinary receipts show a falling off during the year of \$10,468,535.31; those from customs, about \$10,000,000; sales of lands, \$2,000,000; profit on coinage of silver dollars, \$3,000,000, while there was an increase in most of the other sources. The ordinary expenditures show an increase of \$87,636,198.14. Of this, the principal items of increase and their amounts were as follows:

Refund of direct taxes.....	\$11,521,497
Repayment to importers, excess of deposits.....	3,039,763
Debitures or drawbacks.....	1,983,890
French spoliation claims.....	1,085,240
Expenses of eleventh census.....	4,938,833
Colleges for agriculture, etc.....	1,031,000
Salaries and expenses of United States courts.....	1,398,298
Military establishment.....	4,137,226
Naval establishment.....	4,107,690
Indian service.....	1,819,422
Pensions.....	17,479,096
Interest on public debt.....	1,447,851

Debt.—The only change of any note in the bonded debt has been the redemption of the 4-per-cent. bonds. On June 30, 1890, there was outstanding of these bonds \$109,015,750. By the terms of their issue, these bonds were redeemable at the pleasure of the United States after Sept. 1, 1891. On April 1, 1891, the bonds had been reduced, by redemption or purchases to \$53,854,250, of which about one half were deposited with the Treasurer of the United States by national banks, to secure circulation or deposits. The Secretary of the Treasury therefore, to avoid monetary disturbance, offered to the holders of these bonds their choice of presenting them for redemption with interest to Sept. 2, 1891, or for continuance at the pleasure of the Government, with interest at 2 per cent. per annum after that date. Under this proposal there has been continued to December 31, 1891, the sum of \$25,364,500. On the remainder, interest ceased Sept. 2, 1891, and the bonds have nearly all been redeemed. The 2-per-cent. continued bonds are quoted in the market at par, though payable at the option of the Government, a rate of credit unequalled by any government in the world and unprecedented in modern times.

The following table shows amounts of debt at dates mentioned, classified according to those that have and those that have not equivalent reserves in cash:

OBLIGATIONS HAVING NO SPECIFIC RESERVE.

CHARACTER OF DEBT.	OUTSTANDING.	
	June 30, 1890.	Dec. 31, 1891.
Four and one half per cents....	\$109,015,750	*\$25,364,500
Four per cents, bonds.....	602,193,500	559,574,000
Four-per-cents, certificates.....	103,860	88,470
Old demand notes.....	56,032	56,037
Legal-tender notes (old issue).....	246,081,916	246,681,916
National bank redemption account.....		82,679,299
Fractional notes.....	6,911,511	6,905,573
Total.....	\$904,961,609	\$871,348,005

* Continued at 2 per cent.

OBLIGATIONS HAVING EQUIVALENT CASH RESERVE.

CHARACTER OF DEBT.	OUTSTANDING.	
	June 30, 1890.	Dec. 31, 1891.
Old loans matured, coin.....	\$1,115,505	\$1,112,340
Interest thereon matured, coin.....	149,152	
Legal-tender notes (old issue) gold.....	100,000,000	100,000,000
Legal-tender notes of 1890, silver.....		71,807,112
Deposits of currency for certificates, notes.....	12,280,000	6,465,000
Deposits of gold for certificates, gold.....	157,542,979	165,575,599
Deposits of silver for certificates, silver dollars.....	301,509,751	324,772,318
Matured interest, coin.....	1,029,602	
Total.....	\$574,854,299	\$661,176,359

The following table shows the condition of the Treasury on the two dates named, the assets representing not only the liability for the general cash balance in the Treasury, but for amounts due disbursing officers and certain agencies created by law, none of which are included in the general treasury balance:

ITEMS.	Dec. 31, 1890.	Dec. 31, 1891.
Assets:		
Gold coin and bullion.....	\$298,020,214	\$278,546,750
Standard silver dollars and bullion.....	335,930,398	408,187,017
U. S. notes (old issue).....	12,199,848	12,918,665
U. S. notes of 1890.....		2,031,045
Trade dollars, bullion.....	5,394,538	
National bank notes.....	3,349,587	4,601,152
National bank deposits.....	30,047,116	19,897,882
Gold certificates.....	81,584,600	17,472,730
Silver certificates.....	1,564,815	8,954,750
Bonds, interest, checks, etc.....	27,319	96,565
Currency certificates.....	10,000	200,000
Minor coins and fractional currency.....	165,816	819,661
Fractional silver coins.....	18,987,600	18,789,325
Total.....	\$791,491,533	\$767,390,432
Liabilities:		
Gold certificates.....	\$175,491,960	\$165,578,889
Silver certificates.....	309,455,718	324,772,318
Note certificates.....	6,820,000	9,465,000
U. S. Treasury notes of 1890.....	24,900,250	77,327,102
Matured debt and interest.....	5,610,767	
Redemption U. S. notes.....	100,000,000	100,000,000
Redemption national bank notes.....	3,564,729	3,000,730
Public disbursing officers.....	46,486,617	84,008,783
Outstanding checks and drafts.....		4,277,702
General Treasury balance.....	57,571,812	24,574,128
Total.....	\$791,491,532	\$767,390,432

* Not stated.

Coinage.—There was coined in the several mints during the fiscal year ending June 30, 1891, 119,547,877 pieces, valued as follows:

Gold.....	\$24,172,302 50
Silver dollars.....	86,202,502 00
Subsidiary silver.....	2,000,218 35
Minor coins.....	1,163,866 50
Total.....	\$93,538,889 35

being the largest coinage in the history of the mint in this country.

During the year there was exchanged of fine gold bars for gold coins \$24,965,695.20, though under the act of March 3, 1891, a charge was imposed for such an exchange of four cents for one hundred dollars in value. The exports of gold from the United States during the above year was \$86,462,880, of which \$87,504,906 were

in domestic coins. During the same period the imports of gold amounted to \$18,516,112, showing a net loss of gold of \$67,946,768, almost entirely of our gold coins, of which \$35,285,950 were consigned to Great Britain, \$14,450,005 to France, \$12,429,500 to Germany, the remainder to various countries.

During the year an important change has occurred in the coinage of the silver dollar. To Aug. 13, 1890, the purchases of silver for coinage into dollars were made under the act of Feb. 23, 1878, and they amounted to 3,108,199.47 ounces, costing \$3,049,426.46. There were coined during the year under this act 8,740,327 silver dollars. On Aug. 13, 1890, the act of July 14, 1890, went into effect, requiring the purchase monthly of 4,500,000 ounces of silver, and the coinage per month, until July 1, 1891, of 2,000,000 ounces; after that date of only such an amount as might be necessary to provide for the notes therein authorized, which notes were made a legal tender in payment of all debts, public or private, except where otherwise expressly stipulated in the contract, were to be issued in payment of the bullion purchased, one dollar for 371½ ounces of pure silver, and redeemed in coin by the United States Treasury.

It will be noticed that the notes are redeemable in coin, the character of which is not specified, but in another section it is specifically stated that the Secretary of the Treasury shall redeem them in either gold or silver, "it being the established policy of the United States to maintain the two metals at a parity with each other upon the present legal ratio, or such ratio as may be provided by law."

During the year ending June 1, 1891, there were purchased, under the above act, 53,770,125.61 standard ounces of silver, at a cost of \$50,577,498.44, for which notes in question were issued, and there was coined thereunder, to June 30, 1891, 27,292,475 silver dollars, which, with the amount previously stated, coined under the act of 1878, and 200,000 pieces coined from trade dollars, under act of March 3, 1891, makes the total coinage of silver dollars for the year 36,232,802 pieces, on which there was a seigniorage or ostensible profit of \$6,221,333.42, that sum representing the difference between the commercial and the face value of the coins in question.

The fluctuations in the value of silver, as compared with the gold standard, were unusually great during the year, making the lowest value of silver contained in a silver dollar \$0.75, the highest \$0.936, or an average value of \$0.814.

Under the appropriation by Congress of \$150,000 for loss of metal in the coinage of uncurrent fractional silver coins there was recoined of such pieces in face value \$4,277,917.74, on which the loss from abrasion was \$134,676.10, or about 3 per cent.

Circulation.—Of the circulation of the country there has been a decrease in total gold coin of about \$30,000,000 between June 30, 1890, and Nov. 1, 1891, and during the same period an increase of \$40,000,000 in silver dollars, according to the estimate of the director of the mint. There was, however, at the same time, an increase of certificates issued for which coin was held, leaving the net coin in circulation, includ-

ing fractional pieces, at the latter date, \$504,604,015, against \$547,594,158 on June 30, 1890.

The amount of outstanding paper money has also been subjected, meanwhile, to several important changes. The national banks have decreased their circulation more than \$15,000,000, but under the act of July 12, 1890, there has been put into circulation, for which the Government holds purchases of silver bullion presumed of like value, \$68,725,270, representing an increase of circulation to that extent. Also the fund for redemption of national-bank notes, amounting on June 30, 1890, to \$61,238,857, was covered into the Treasury by the same act, except the small portion known as the 5-per-cent. fund, established to meet current redemptions of the notes, reducing the fund to \$5,781,538 on Jan. 1, 1892, and further increasing the actual paper money in circulation, making an increase in the aggregate of the paper money in circulation between the dates named from \$908,549,612 to \$1,069,330,796, or in the total coin and paper circulation of the country from \$1,456,143,770 to \$1,573,934,811, a *per capita* increase on the census of 1890 from \$20.26 to \$25.13.

The following table shows in detail the changes in the monetary circulation of the country between the dates named:

CHARACTER OF ISSUE.	OUTSTANDING.	
	June 30, 1890.	Nov. 1, 1891.
Coin:		
Gold coin	\$629,932,449	\$596,386,272
Silver dollars	869,426,466	409,475,368
Silver fractional pieces	76,825,805	77,301,515
Total coin in country ..	\$1,076,184,220	\$1,083,163,155
From which there should be deducted the coin held in Treasury as reserve:		
For redemption of gold certificates	\$131,880,019	\$156,890,739
For redemption of silver certificates	297,210,048	323,668,401
For redemption of legal-tender notes (old issue) ..	100,000,000	100,000,000
In all	528,590,062	580,559,140
Leaving net coin circulation.	\$547,594,158	\$502,604,015
Paper:		
Legal-tender notes	\$346,681,016	\$346,681,016
Legal-tender notes of 1890	68,725,270	68,725,270
Fractional notes	6,911,511	6,906,692
National-bank notes	187,549,548	172,184,558
Old demand notes	56,082	55,647
Gold certificates	131,880,019	156,890,739
Silver certificates	297,210,048	323,668,401
National-bank certificates ..	12,280,000	11,095,000
Total paper circulation.	\$982,068,469	\$1,086,207,328
From which should be deducted legal-tender notes reserved for national-bank certificates	\$12,280,000	\$11,095,000
Fund for redemption of national-bank notes	61,238,857	5,781,538
In all	\$78,518,857	\$16,876,538
Leaving net paper circulation	\$908,549,612	\$1,069,330,785
Add net coin circulation ..	547,594,158	504,604,015
Total circulation	\$1,456,143,770	\$1,573,934,800
Circulation <i>per capita</i> , census of 1890	\$23 26	\$25 13

National Banks.—During the year ending Oct. 31, 1891, there were organized 193 new national banks, located in 41 States and Territories, and possessing an aggregate capital of \$20,700,000. During the same period 41 banks went into voluntary liquidation, and 25, with a capital of \$3,662,000, became insolvent, leaving a net gain of 127 banks with a capital of \$12,553,000.

The total number of banks in existence Oct. 31, 1891, was 3,694, having in capital stock \$684,755,865; bonds deposited to secure circulation, \$152,113,850; bank notes outstanding, \$171,368,948, including \$35,430,721, representing lawful money deposited to redeem circulation outstanding. The amount of circulation secured by the pledge of United States bonds has increased during the year \$11,795,101, notwithstanding a considerable decrease in the aggregate.

Of the new banks organized, 17 were located in Texas and a like number in Pennsylvania, each of these two States organizing within the year more banks than any other State. More than half of the new banks were west of the Mississippi river. Of the 25 banks which failed during the year, 13, representing a capital of \$1,137,000, were in Kansas and Nebraska.

The following statement shows the resources and liabilities, in aggregate, of the national banks for the period named:

RESOURCES.	OCT. 2, 1890.	SEPT. 25, 1891.
	3,540 banks.	3,677 banks.
<i>Resources:</i>		
Loans and discounts.....	\$1,986,088,820 18	\$2,005,468,205 98
Bonds for circulation.....	139,969,060 00	150,035,690 60
Bonds for deposits.....	25,386,500 00	20,492,500 00
U. S. bonds on hand.....	2,297,500 00	4,389,430 00
Other stocks and bonds.....	115,522,951 02	122,179,076 40
Due from reserve agents.....	189,451,786 49	198,990,323 44
Due from national banks.....	118,289,612 46	115,196,652 26
Due from State banks.....	28,485,228 32	29,471,898 55
Real estate, etc.....	76,885,816 02	68,270,122 08
Current expenses.....	0,099,404 20	9,679,281 42
Premiums paid.....	14,248,488 10	14,765,760 70
Cash items.....	17,201,819 17	18,272,545 10
Clearing-house exchanges	106,767,176 06	122,039,882 10
Clearing-house loan certificates.....	.....	.....
Bills of other banks.....	18,492,892 00	19,991,167 00
Fractional currency.....	766,846 08	867,462 37
Specie.....	195,908,558 84	189,515,075 91
Legal-tender notes.....	80,604,781 00	97,615,608 00
U. S. certificates of deposit	6,165,000 00	15,720,000 00
Five-per-cent. fund with Treasurer.....	6,128,567 88	6,536,981 81
Due from U. S. Treasurer.....	816,923 48	1,457,807 85
Total.....	\$3,141,487,494 85	\$3,218,080,271 02
<i>Liabilities:</i>		
Capital stock.....	\$650,447,935 00	\$677,496,870 25
Surplus fund.....	213,561,895 78	227,576,485 91
Undivided profits.....	97,066,635 74	103,284,613 73
National-bank circulation.....	122,928,084 50	131,398,301 50
State-bank circulation.....	77,338 50	74,118 50
Dividends unpaid.....	2,476,836 34	1,424,785 58
Individual deposits.....	1,564,445,174 67	1,588,315,081 37
U. S. deposits.....	25,118,569 39	15,700,672 40
Deposits of U. S. disbursing officers.....	4,229,511 42	4,506,660 33
Due to national banks.....	285,081,250 25	288,576,733 96
Due to State banks.....	141,360,726 21	142,018,070 06
Notes and bills rediscounted.....	28,660,829 51	21,981,982 56
Bills payable.....	10,301,913 54	10,778,944 37
Clearing-house loan certificates.....	.....	.....
Total.....	\$3,141,487,494 85	\$3,218,080,271 02

UNIVERSALISTS. The statistical reports of the Universalist Church, presented to the General Convention in October, showed that the number of parishes was 947; of church members, 41,177; and of members of Sunday schools, 57,110.

The General Convention met at Worcester, Mass., Oct. 20. The Hon. H. W. Parker, of New Hampshire, presided. The treasurer reported that he had received \$57,000 during the year, and held securities in trust, etc., to the value of \$247,000. The report of the Board of Trustees embodied a report of the mission in Japan, which was represented as in a prosperous condition, and as offering a favorable opportunity for the introduction of the Universalist system of faith. The proposition of the National Unitarian Conference concerning co-operation with the Universalist Church in America and Japan was received with favor, and the convention gave its assurance that any steps taken toward a closer working union with either the Unitarian or the German Liberal branches of the Christian Church in Japan, provided the distinctive features of Universalism were recognized, would meet with its hearty approval and sympathy. The convention recommended the opening of the Columbian Exposition, but without the use of machinery, on Sunday. The resolutions on temperance urged united action against the saloon, and condemned the use of tobacco, recommending that all councils of the Church require candidates for the ministry to be free from the habit. The meeting of the Woman's Centenary Association was held in connection with that of the General Convention.

URUGUAY, officially known as the Banda Oriental del Uruguay, a republic in South America. The President is elected for four years by electors chosen by the popular vote. The Congress consists of a Senate of 19 members, 1 from each department, elected for six years by an electoral college, and a House of Representatives having 1 member for every 3,000 adult male citizens who are able to read and write, elected by direct popular suffrage for three years. Congress sits every year from the middle of February till the middle of July. Dr. Herrera y Obes was elected President for the term ending March 1, 1894. His Cabinet, at the beginning of 1891, was composed as follows: Minister of the Interior, A. Capurro; Minister of War and Marine, Col. J. Villar; Minister of Justice, Worship, and Public Instruction, Dr. C. Berro; Minister of Foreign Affairs, B. Vidal; Minister of Finance, Dr. C. Pena.

Area and Population.—Uruguay has an area of 69,835 square miles, and a population of 682,943 persons, as officially estimated in 1889. The preliminary results of the census of 1891 make the population 711,656. The number of marriages during 1889 was 4,175; of births, 26,981; of deaths, 12,882; excess of births, 14,099. In 1890 there were 24,117 immigrants, while the number of departures was 19,852. Montevideo, the capital and chief port, had a population of 175,000 in 1889. The army numbers 321 officers and 3,234 men, the police troops about 4,000 men, and the National Guard 24,000 men. There is a naval force of 7 small steamers, 5 gunboats, and 1 steam loop.

Finances.—The receipts of the treasury during the fiscal year ending June 30, 1889, were \$15,690,294, of which \$9,557,835 were derived from customs, \$1,630,439 from direct taxation, \$1,180,756 from patents, and \$3,320,264 from other sources. The public debt on Jan. 1, 1890, amounted to \$81,279,752.

Commerce.—The imports in 1890 had a total value of \$32,365,000, of which \$8,772,000 came from Great Britain, \$5,099,000 from France, \$2,809,000 from Germany, \$2,643,000 from the Argentine Republic, \$2,629,000 from Italy, \$2,473,000 from Brazil, \$2,445,000 from the United States, \$2,174,000 from Spain, \$1,493,000 from Belgium, and \$1,825,000 from other countries. The total value of the exports was \$29,086,000, of which \$6,121,000 went to France, \$3,946,000 to Great Britain, \$3,279,000 to Brazil, \$3,141,000 to Belgium, \$2,551,000 to the Argentine Republic, \$2,004,000 to the United States, \$1,020,000 to Germany, and \$7,024,000 to other countries. The export of hides and leather was \$9,413,000 in value; wool, \$7,866,000; meat, \$3,881,000; extract of beef, \$1,677,000; tallow, \$1,655,000; grain, \$924,000; live animals, \$545,000; marble, \$450,000; horse hair, \$413,000. The wool clip is about 70,000,000 pounds per annum, valued at \$10,000,000. The climate is so temperate and the pasturage so rich that the flocks and herds multiply at an extraordinary rate. In 1888 the number of cattle slaughtered was 773,449, the only valuable products being hides and tallow, as the meat finds little use except for beef extract. A small proportion of the mutton and beef, though considerable in quantity, has more recently been shipped abroad in the frozen condition, and there is a large exportation of jerked beef to Brazil. Wheat, corn, olives, grapes, and tobacco are raised, mainly by Spanish, Swiss, and Italian colonists. There were 1,431 ocean vessels, of 1,812,361 tons, entered at Montevideo in 1890, including 820 steamers, of 1,397,983 tons; while the total number cleared was 1,362, of 1,779,277 tons, of which 841, of 1,376,184 tons, were steamers.

Communications.—The railroads open to traffic on April 1, 1891, had a total length of 1,127 kilometres. There were 664 kilometres in course of construction, and 2,260 kilometres more were planned. The number of pieces of mail matter sent during 1889 was 14,975,246 in the internal and 6,364,811 in the international service. The receipts of the post-office were 1,114,941 francs, and the expenses 1,062,531 francs. The telegraphs on Jan. 1, 1890, had a length of 3,764 kilometres. The number of dispatches in 1889 was 189,412.

The Financial and Political Situation.—Conflicts on political and financial questions led to the resignation of the ministry on Feb. 28, and on March 4 a cabinet of conciliation was formed, composed as follows: Minister of the Interior, Captain-General Perez; Minister of Foreign Affairs, Manuel Herrero y Espinosa; Minister of Finance, Carlos Maria Ramirez; Minister of War and Marine, Gen. Callorda; Minister of Commerce, Agriculture, and Public Works, José Maria Castellanos. An advance of \$5,000,000 was obtained from bankers to help the Government out of its financial difficulties. Early in May, Juan Capurro succeeded Señor

Castellanos as Minister of Commerce and Agriculture. The Government was compelled to let some of the railroad guarantee bonds go into default, being involved in the financial crisis that overtook the country in consequence of the collapse of gigantic speculations carried on in sympathy with those in Argentina, that were in fact instituted by the same people in both countries. The foreign debt, consisting of a unified loan of £10,624,000 paying 5 per cent., and a sterling loan of £4,120,000 paying 6 per cent., imposed an interest charge greater than the Government could meet, and the English bondholders were constrained, in August, 1891, to agree to a general reduction of the rate of interest to 3½ per cent. The bill authorizing the consolidation of the external debt on this basis was passed by both Chambers in the beginning of October. On Oct. 11 a revolution was attempted in Montevideo. The revolutionists, who belonged to the party of Blanco, attempted without success to suborn the artillery. A rising took place in the suburb of La Unión, and simultaneously men collected in the country districts. Soldiers were at hand to suppress the insurrection, and after a short fight, in which 54 persons were killed, and many wounded, quiet was restored. There were 52 arrests made. About 700 insurgents collected in the capital. The leader, Dr. Pantaleon Perez, was shot, and several of the chief conspirators were made prisoners in the beginning, as they entered the artillery barracks, having been entrapped by the commander, Col. Latorre, who pretended to enter into the conspiracy. Martial law was declared in Montevideo by act of the Congress, and troops scoured the country for members of the revolutionary or Junta party, who all fled from the capital. The supporters of the Government declared that the clergy were the instigators of the outbreak, and that a bishop had delivered a speech in favor of revolt.

UTAH, a Territory of the United States, organized Sept. 9, 1850; area, 84,970 square miles. The population, according to each decennial census, was 11,380 in 1850; 40,273 in 1860; 86,786 in 1870; 143,963 in 1880; and 207,905 in 1890. Capital, Salt Lake City.

Government.—The following were the Territorial officers during the year: Governor, Arthur L. Thomas; Secretary, Elijah Sells; Treasurer, Bolivar Roberts; Auditor, Arthur Pratt; Commissioner of Common Schools, Jacob S. Boreman; Chief Justice of the Supreme Court, Charles S. Zane; Associate Justices, Thomas J. Anderson, John W. Blackburn, and Henry P. Henderson, who resigned early in the year and was succeeded by James A. Miner.

Finances.—During the two years ending Dec. 31, 1891, the receipts of the Territory were \$1,477,140.31. Of the taxes for 1891 there is still due from the counties, as nearly as can be estimated, \$226,849.77. The disbursements during the same period amounted to \$1,500,313.80. A deficiency of \$23,173.49 is shown by these figures, the chief causes for which are, first, the payment of \$11,000 to Auditor Pratt and Treasurer Roberts, under order of the court, as salaries during the time they were kept out of office, and second, to the payment of \$11,739.38 on warrants issued by Auditor Clayton in excess of

the balance shown on his books. According to these books, the warrants outstanding on March 15, 1890, amounted to \$41,623.59, but up to Dec. 31, 1891, there had been presented and paid by the Territory warrants issued by him amounting to \$53,302.07. No method is provided by law for ascertaining how many more of such warrants are still in circulation.

The total assessed valuation of property in the Territory for 1891 was \$124,986,199.37, against \$108,612,216 for 1890. The value of real property was \$72,334,655.27; improvements thereon, \$22,387,670.43; and personal property, \$30,263,872.67. Included in the assessment were 88,261 horses, valued at \$2,734,893; 246,632 cattle, valued at \$2,923,504; and 1,495,392 sheep, valued at \$2,490,866. The valuation of Salt Lake County alone was as follows: Real property, \$39,195,819.27; improvements thereon, \$6,597,095; personal property, \$13,934,558.67; total, \$59,727,472.94. The rate of taxation for 1891 was 5 mills.

Education.—The public-school system of the Territory is in its infancy, but encouraging progress is shown. The Territory supports a university and an agricultural college. At the latter institution there were 280 pupils in December, 1891, this number being all that can be conveniently provided for. The first term of the college began in September, 1890, with 22 pupils.

Charities.—The Insane Asylum at Provo has been crippled from lack of funds. Although the last Legislature appropriated a large sum for the completion of the asylum buildings and the care of the inmates, there was no money in the treasury with which to pay the warrants. The managing board was obliged to borrow money at a high rate of interest, or close the institution. It is indebted for work done and materials furnished in the sum of \$40,000.

Prisons.—The Territorial Reform School buildings were destroyed by fire on June 24, but the insurance enabled the trustees to rebuild at once without expense to the Territory. During the year the addition to the Territorial Penitentiary authorized by Congress has been completed at a cost of \$95,000.

Agriculture.—The following figures, reported by the Territorial statistician, cover the agricultural operations of 1890: Wheat, 110,114 acres, product, 2,409,454 bushels, valued at \$1,927,563.20; oats, 32,763 acres, product, 1,132,218 bushels, valued at \$532,142.46; barley, 7,358 acres, product, 212,546 bushels, valued at \$106,273; rye, 3,759 acres, product, 45,204 bushels, valued at \$27,574.44; corn, 8,776 acres, product, 165,067 bushels, valued at \$118,848.24; potatoes, 7,845 acres, product, 935,874 bushels, valued at \$496,013.22; hay, 80,647 acres, product, 120,572 tons, valued at \$1,637,367.76; lucern, 101,729 acres, product, 306,100 tons, valued at \$2,715,107.

The Territory also produced, in 1890, 7,451,252 pounds of wool valued at \$1,229,456.88; 1,847,447 pounds butter, valued at \$323,303.23; 247,875 pounds cheese, valued at \$37,181.35; \$54,387 pounds honey, valued at \$76,894.83; 31,866 gallons of wine, valued at \$28,697.40; and 61,368 gallons of cider, valued at \$21,478.80. The dried fruit product was as follows: Apples, 197,167 pounds, valued at \$11,830.02; peaches,

178,594 pounds, valued at \$49,645.23; apricots, 11,895 pounds, valued at \$1,486.88; plums, 6,731 pounds, valued at \$841.28; pears, 9,921 pounds, valued at \$992.10.

Mining.—The mineral product of the Territory for 1890, as estimated by Wells, Fargo & Co., is summarized as follows: 950,708 pounds copper, valued at \$76,536.64; 5,982,800 pounds refined lead, valued at \$203,312; 62,181,817 unrefined lead, valued at \$1,895,454.51; 8,163,586 ounces of fine silver, valued at \$8,492,296.44; 33,851 ounces fine gold, valued at \$677,920; total export value, \$11,844,532.59.

Coal.—During 1890 the four bituminous mines in Utah produced 355,851 tons, valued at \$572,519. The Scofield mines yielded \$335,756; Castle Gate, \$173,527; Coalville, \$63,236.

Industrial.—There were in operation, during 1890, 310 industrial establishments, employing 3,274 persons, whose wages amounted to \$1,597,177. The raw material consumed was valued at \$2,187,291, and the manufactured product at \$5,886,104. The total invested capital was reported at \$4,405,881.

Irrigation.—In response to an invitation issued by Gov. Thomas on June 12, a convention of delegates representing nearly every State and Territory west of Mississippi river met at Salt Lake City on Sept. 15, for the purpose of considering questions pertaining to the reclamation of arid lands. The following resolutions were adopted:

That it is the sense of this convention that the committee selected to propose and present to Congress the memorial of this convention respecting public lands should ask, as a preliminary to the cession of all the land in the Territories in accordance with the resolutions of the convention, a liberal grant to said Territories and to the States to be formed therefrom of the public lands to be devoted to public-school purposes.

That this congress is in favor of granting in trust, upon such conditions as shall serve the public interest, to the States and Territories needful of irrigation, all lands now a part of the public domain within such States and Territories, excepting mineral lands, for the purpose of developing irrigation, to render the lands now arid fertile and capable of supporting a population.

The Mormon Church Property.—When the United States Supreme Court, in 1890, affirmed the constitutionality of the Edmunds law and declared the property of the Mormon Church to be escheated to the United States, it withheld its final decree in the case and intimated its desire that Congress should direct some disposition of the property so escheated. This suggestion was not acted upon by Congress, and in May of this year the court filed its final decree, in which it declared that the personal property should be devoted to such lawful charitable uses as would most nearly correspond to its former destiny. In the absence of legislation by Congress, it intimated that a master might be appointed to report a scheme for its disposition, subject to approval of the court. The case was remanded to the Utah Supreme Court for further proceedings, the property and its accumulation to remain in the hands of the receiver until otherwise ordered, and to be liable for the costs of suit and of the receivership. In obedience to this decree, the Utah court in July appointed a master, who

in January, 1892, reported a scheme of which the following is a brief outline:

1. That the funds be constituted a permanent school fund for the perpetual endowment of the public schools of the Territory of Utah.

2. That a commissioner be appointed by the court, to have custody and control of the fund, to loan the same within the Territory, in bulk or in parcels, on real estate and personal security, or invest the same in school or other municipal bonds within the Territory, either at the discretion of said commissioner or under the direction of the court.

Political Movements.—On Sept. 25, 1890, the President of the Mormon Church, Wilford Woodruff, issued a proclamation denying that his Church still countenanced polygamy, or that plural marriages were still being solemnized under its auspices, and publicly advising his followers to obey the laws of the land respecting marriage. On Oct. 6, 1890, at a general conference of the Church, this action of the president was approved, and the manifesto accepted by the people in the following language:

I move that, recognizing Wilford Woodruff as the President of the Church of Jesus Christ of Latter Day Saints, and the only man on the earth at the present time who holds the keys of the sealing ordinances, we consider him fully authorized by virtue of his position to issue the manifesto which has been read in our hearing, and which is dated Sept. 24, 1890, and that, as a Church in general conference assembled, we accept his declaration concerning plural marriage as authoritative and binding.

The radical change in Mormon doctrine involved in this unexpected action was followed by a corresponding change in the political conditions of the Territory. Since their settlement of the Territory in 1847, the Mormons have had their own political organization and have acted as a unit in political matters, while the non-Mormons, though identifying themselves with national parties, have also acted together in all local matters. The Peoples' party has been a synonym for Mormonism, and the Liberal party for anti-Mormonism. An ostensible change from these conditions began early in February of this year, Weber County taking the lead. At Ogden City, in this county, on Feb. 16, a mass meeting of Republicans was held, and on Feb. 21 a mass meeting of Democrats, at each of which meetings a considerable number of Mormons were in attendance and took part in the formation of permanent party organizations. In May a similar movement took place in Salt Lake City. On the 24th of that month the Salt Lake "Herald," heretofore the organ of the Mormon party, announced that it would hereafter represent the Democratic party. Previous to this time the Salt Lake "Evening Times" had given its support to the movement in favor of the Republican party. On June 10 the Territorial central committee of the Peoples' party met at Salt Lake City and voted that the party organization be dissolved, and that its members be free to unite with any of the great national parties. This action was regarded by the leaders of the Liberal party with considerable suspicion. Having no faith in Mormon sincerity, they believed that the movement was part of a scheme to create an impression that the Mormon Church, as an organization, was no longer united in poli-

tics, and that the admission of Utah as a State could now safely be accomplished. At a convention of the Liberal party of Salt Lake County, in July, it was resolved

That we stamp the attempt to divide Gentiles upon party lines as but another attempt of the Mormon leaders to accomplish by stealth and fraud, and with the help of Gentile allies, what they have so often failed to attain unaided, and we deplore the blindness which has led a few former friends astray.

Notwithstanding this feeling, a considerable number of former Liberals united with the few Mormons who declared themselves Republicans in forming a separate Republican organization, which put candidates in the field for the General Assembly and for local offices. The great majority of Mormons, however, became Democrats, and the Democratic organization practically passed into their control. A Territorial convention of this new democracy was held at Salt Lake City on July 21, at which a party platform was adopted, containing, among others, the following resolutions:

We are unalterably opposed to force and fraud in the conduct of elections, or to any interference with them by extraneous power or means.

We favor the full restoration of silver to the position it occupied in our national currency before its demonetization by the Republican party.

The Democratic party being naturally the friend of labor, we ask the working-men of Utah to carefully consider which of the two great national parties is best calculated to promote their welfare, and pledge to them on our part all legitimate and proper assistance to further their well-being. We are opposed to Chinese or imported contract labor, and opposed to the Republican plan in vogue in Pennsylvania of discharging workmen for striking against pauper wages.

We are in favor of the eight-hour-per-day law on all public works, and not less than the minimum rate of wages shall be paid to the various trades.

Be it resolved, That we accept the declarations and action of the Mormon people abandoning the practice of polygamy, and the People's party in disbanding the same, as done in good faith and all sincerity; and we favor the restoration of the franchise to all disfranchised citizens who will obey the laws of the United States.

At the election, Aug. 3, for members of the General Assembly and local officers, there were three parties in the field—the Democratic, the Republican, and the Liberal. The result of the election, so far as relates to the General Assembly, was as follows: Council, Democrats 8, Liberals 4; House, Democrats 16, Liberals 8. The Republicans elected no members, but they did not abandon hope. The party leaders proceeded to call a Territorial convention to meet on Sept. 2, and there a formal declaration of principles was adopted, chief among which were the following:

We deny that the Republican party in Utah is organized to unduly hasten statehood. The question of statehood for Utah is not involved in the present political issues, or in the division of the people of the Territory on national party lines.

We urge the enactment of laws which will establish uniformity and equity in the application of the general laws of the United States Government in respect to the location and development of mining property, so that prospectors may be more greatly encouraged to continue their explorations in our great mining districts.



THE CASTLE GATE, UTAH.

We demand the enactment of a law making it a misdemeanor for employers to practice what is known as blacklisting, or to interfere with the freedom of their employes in the exercise of the franchise by any sort of coercion.

We hold that eight hours should be made by law a day's work on all public works.

We are in favor of equitable railroad legislation under which railroad companies shall be encouraged to build the lines that are needed for the further development of Utah's great resources, and which shall at the same time fully protect the interests of individuals and communities in their relations to the common carriers.

We demand such legislation as will satisfactorily equalize the assessment and taxation of property.

We favor the enactment of a personal registration law which shall compel voters to register in person or by satisfactory vouchers, giving their exact residence; and we urge the adoption of a ballot law modeled after the Australian system, so that the disgrace of fraud at the polls, heretofore too familiar in some places in this Territory, may not hereafter attach to the fair name of Utah.

V

VENEZUELA, a federal republic in South America, composed of 8 States, a Federal District, 3 Territories, and 2 colonies. Under the Constitution of April 27, 1881, as revised on April 16, 1891, the Senate has 27 members, 3 from each State and 3 from the Federal District, who must be natives of the republic and at least thirty years old. They are elected for four years. The Chamber of Deputies is composed of 57 members, 1 for every 35,000 of population, who are elected for the same term by the direct suffrage of the people in the several States. The President and the members of the Federal Council serve two years. Dr. Raimundo Anduezo Palacio was elected President for the term ending Feb. 20, 1893. The Council, the members of which are chosen by Congress, elects the President, and neither he nor they can serve for two consecutive terms. The Council is composed of 8 Senators, representing the 8 States, and 9 Deputies, 1 from each State and 1 from the Federal District.

Area and Population.—The area of Venezuela is 632,695 square miles. The population, according to the census of 1891, is for the different political divisions as follows:

DIVISIONS.	Males.	Females.	Total.
Federal District.....	46,650	48,488	95,138
Bermudez.....	149,022	151,575	299,597
States:			
Bolívar.....	29,064	27,235	56,299
Carabobo.....	97,270	100,751	198,021
Falcón.....	66,717	72,393	139,110
Lara.....	117,863	128,807	246,670
Los Andes.....	168,987	172,209	341,196
Miranda.....	294,895	289,414	584,309
Zamora.....	126,348	120,428	246,776
Zulia.....	41,077	44,879	85,956
Territories:			
Amazonas.....	28,698	21,494	50,192
Colón.....	125	4	129
Delta.....	3,908	2,814	6,722
Guajira.....	80,848	85,143	165,991
Yuruarí.....	12,712	9,680	22,392
Total.....	1,187,189	1,186,888	2,374,077

The number of marriages in 1889 was 6,705; of births, 76,187; deaths, 55,218; excess of births,

20,969; immigration in 1890, 1,555. The population of Caracas in 1891 was 72,429.

Finances.—The receipts of the Government are estimated in the budget for 1890-'91 at 25,976,000 bolívars, of which 25,000,000 bolívars are derived from import duties, 6,000,000 bolívars from internal taxes, and 4,976,000 bolívars from public works. The expenditures, which are made to balance the receipts, are distributed as follow: Interior Department, 7,340,406 bolívars; Foreign Affairs, 2,004,969 bolívars; Department of Fomento, embracing colonization, the postal and telegraph service, and public printing, 2,685,437 bolívars; public instruction, 3,758,158 bolívars; public works, 5,790,767 bolívars; finance, 4,953,226 bolívars; public debt, 5,445,120 bolívars; war and marine, 3,997,917 bolívars. The public debt on Jan. 1, 1891, consisted of the national consolidated or internal debt of 5-per-cent. bonds to the amount of 38,130,977 bolívars, a foreign debt of 67,388,462 bolívars paying 4 per cent., and 5,420,148 bolívars due under diplomatic conventions with Spain, France, and Germany and paying 3 per cent., making the total sum of 110,938,687 bolívars.

Army and Navy.—The permanent army in 1891 consisted of 11 battalions of 4 companies each, with 120 men to the company; 2 detached infantry companies; and 2 companies of artillery, with 15 guns. The whole force numbered 5,760 men. The intestine wars of Venezuela have been fought by the militia, in which all able-bodied citizens are enrolled between the ages of fifteen and forty-five. Their number in 1889 was about 250,000. In former wars 60,000 have sometimes been under arms at the same time. The naval force consists of 3 small steamers and 3 sailing vessels, with a personnel of 9 officers and 150 men.

Commerce.—Venezuela is one of the richest in natural resources of the South American republics. The chief products are coffee and cacao. The export of hides is also important. There are about 11,000,000 head of cattle in the country. Gold and copper are mined. The

gold mines of Yuruari, in Guiana, although their working has just begun, produce \$11,000,000 annually. The total value of the imports in 1889-'90 was 83,614,411 bolivars (1 bolivar = 15.4 cents); that of exports 100,917,338 bolivars. The principal exports were as follow: Coffee, 71,168,000 bolivars; cacao, 9,329,000 bolivars; gold, 9,072,000 bolivars; hides, 4,728,000 bolivars; copper, 1,972,000 bolivars; animals, 1,290,000 bolivars. The trade with the United States has largely increased and now exceeds that with European countries. In 1880 the imports from the United States amounted to \$2,270,000 in American money and the exports to the United States to \$6,040,000. In 1889 the imports of American merchandise reached \$5,000,000 and the exports to the United States exceeded \$10,000,000. The growth of this trade is due to the establishment of direct steamship communication with the United States. There were 1,155 steamers and 6,394 sail vessels entered and cleared in 1887-'88. The Venezuelan merchant fleet comprised 26 steamers and 2,497 sail vessels.

Communications.—The railroads in operation in 1891 had a length of 430 kilometres. Among the new lines that have been begun by British, American, and German companies the principal ones are the railroad to connect Caracas with the State of Carabobo and one of equal length which will run from Caracas to the city of San Carlos. The number of letters and postal cards posted in 1889-'90 was 1,572,292; the number received, 1,514,909; printed inclosures posted, 1,365,576; received, 1,604,255; expenses, 961,815 bolivars. The telegraph lines belonging to the Government had a length of 5,645 kilometres in 1890. The number of messages in 1890 was 419,724; receipts, 326,904 bolivars; expenses, 949,326 bolivars.

Boundary Questions.—By the award of the Queen-Regent of Spain the boundary question existing between Venezuela and Colombia since 1833 was settled by giving to Colombia over 2,500 square leagues of territory. The boundary dispute with England was aggravated in March, 1891, by the wounding of an Englishman named Campbell, who attempted to work a claim in the disputed territory without applying for a grant from the Venezuelan authorities and who was shot in resisting arrest, and died a few days afterward of the wound. The district where the shooting occurred was at once occupied by a British military force and the Venezuelans driven out. The British forcibly took possession of the northwest district of Guiana after the discovery that it contained some of the richest gold fields in the world, although it was actually and effectively occupied by Venezuelans previously, and was claimed by them by virtue of historical documents dating from the time of the Spanish conquest. The British title was based on the survey made about 1842 by Sir Robert Schomburg, who fixed on the Amacura river as a scientific frontier. The Venezuelans claim that their territory extends to the Essequibo river, taking in the northern part of Guiana and the rich mineral districts in the west. They dislike especially to see the mouth of the Orinoco river, their principal water way, commanded by British posts. In 1890 British military posts have been advanced as far as the Ama-

cura river. The Venezuelan Government on Feb. 17, 1890, represented to the Government at Washington that Great Britain had forcibly taken possession of a part of Venezuelan Guiana, and asked for its intervention. Secretary Blaine instructed Lincoln in London to use his good offices to bring about a resumption of diplomatic intercourse between Great Britain and Venezuela as a preliminary step toward the settlement of the dispute by arbitration. On June 25 Mr. Lincoln presented Señor Polido, the Venezuelan envoy to Lord Salisbury.

Rejection of Reciprocity.—The Venezuelan Congress in July, 1891, refused to conclude a reciprocity treaty with the United States on the terms proposed. The ground given in the report of the special committee which was adopted by Congress was that Venezuela is a purely agricultural country, exporting a limited number of natural products. To remove the import duties imposed on these in the United States would not greatly benefit Venezuela, which finds customers in many countries, while to admit American machinery and manufactured goods free of duty would be to sacrifice 25 per cent. of the customs revenue and unduly favor the manufacturers of the United States at the expense of Europeans, who are good customers of Venezuela, and who have generally given more favorable terms to merchants than have the Americans.

VERMONT, a New England State, admitted to the Union March 4, 1791; area, 9,565 square miles; population in 1890, 332,422. Capital, Montpelier.

Government.—The following were the State officers during the year: Governor, Carroll S. Page; Lieutenant-Governor, Henry A. Fletcher; Secretary of State, Chauncey W. Brownell, Jr.; Treasurer, Henry F. Field; Auditor of Accounts, E. H. Powell; Adjutant-General, Theodore S. Peck; Superintendent of Education, E. F. Palmer; Chief Judge, Jonathan Ross; Assistant Justices, John W. Rowell, Russell S. Taft, James M. Tyler, Loveland Munson, Henry R. Start, and L. H. Thompson; Clerk, M. E. Smilie. All these officials are Republicans. The Senate has 29 Republicans and 1 Democrat; the House, 172 Republicans, 62 Democrats, and 5 Independents.

Finances.—The Treasurer's statement for the year ending June 30 shows the following resources: Cash on hand, \$62,635.03; corporation tax for 1891 (estimated), \$250,000; State tax, 18 cents, one half payable Nov. 10, 1891, one half June 10, 1892 (estimated), \$320,000; due from towns, balance State school tax, \$1,553.11; due from towns, United States deposit money recalled for redistribution, \$482.80; total, \$634,670.94. The liabilities were as follow: Due towns, United States deposit money, \$21,345.49; due towns, 5-per-cent. State school tax, \$89,029.77; due Soldiers' Home, received from United States Government, \$1,575; due to soldiers, unpaid balances, \$8,153.51; temporary loans, \$154,000; total, \$274,103.77; leaving available for the current fiscal year \$360,567.17. The State has also in trust \$135,500 the Agricultural College fund, represented by registered bonds due in 1910. There is also the Huntington fund, amounting to about \$211,131, a liability of the same nature as the Agricultural College fund. The money has been used to pay current

expenses, and the interest is applied to the use of the schools for which the fund was given. To the resources should be added the direct-tax money paid later in the year by the United States Government, which amounted to \$179,407.

The following statement was published in November:

The report of the inspector of finance shows that the savings institutions and trust companies of this State hold deposits to the amount of \$21,629,803, an increase during the last year of \$2,289,738. Of the aggregate sum, \$3,317,860 is held by non-residents. The number of resident depositors is 64,398; non-resident, 8,309; aggregate, 72,707, an increase during the year of 6,943. Dividends to depositors amount to \$643,392, an increase of \$51,764. The dividends range from 4 to 41 per cent. The amount loaned on mortgages of real estate in Vermont is \$4,668,499; on mortgages of real estate elsewhere, \$8,066,590. The table of Western mortgage investment shows that these institutions had in this class of securities, in 1879, \$1,278,399, and that the amount has increased year by year till in 1891 the aggregate sum has reached \$8,066,590.

Legislative Session.—An extra session of the Legislature was called by the Governor, to meet on Aug. 25, to enact the special laws required by act of Congress refunding the direct tax levied in 1861, and by another act providing for the erection of a Federal building at St. Albans. The Governor said also that there appeared to be a strong public sentiment calling for further legislation on the subject of the Columbian Exposition at Chicago, for which only \$5,000 had been appropriated. The session was convened on Aug. 25, and adjourned on Aug. 27. A joint resolution was passed accepting the direct-tax money and authorizing the Governor to receive it. A joint resolution was passed turning the money into the treasury. A bill making the appropriation for the World's Fair \$15,000 was passed by a vote of 150 to 49, after a strenuous effort to amend by making the sum \$10,000. It is designed to erect a building of granite, marble, and slate, to cost from \$6,000 to \$8,000. Land was ceded to the United States for sites for buildings at St. Albans. A bill was passed providing that express companies shall not charge higher rates than those of Oct. 1, 1890—that is, before the passage of the corporation tax law of the last session. The companies added 4 per cent. to their rates after the passage of that law. Among other measures passed were the following:

Incorporating the Black River Railroad Company. Incorporating the North Craftsbury Water Company and the Pittsford Aqueduct Company.

Extending the time for completing the Rutland and Woodstock Railroad.

The Direct-tax Money.—The share of Vermont in the direct-tax money amounted to \$179,407. The question arose whether the General Government ought not to offset this by a claim for arms furnished to the State after the St. Alban's raid in 1864. The State at that time organized and officered several regiments of militia, including a regiment of cavalry, for the defense of the northern border. Some of the regiments were in active service, and all maintained their organization and were ready for duty. It seemed unfair to charge the State for arms furnished to the militia while they were

defending the border and saving the Government from withdrawing troops from the front; and the claim was not pressed. After the State Legislature passed the measure accepting the money the Governor went to Washington to receive it, and it was paid to the State treasury.

United States Senator.—On April 6 Senator George F. Edmunds sent in his resignation, to take effect on Nov. 1. He had held the office continuously for twenty-five years, having been first appointed by Gov. Paul Ballingham to the senatorship made vacant by the death of Salmon Foot, during the presidency of Andrew Johnson. It was at first supposed that a successor to Senator Edmunds could be elected at the special session of the Legislature to be called in August; but since no actual vacancy was to occur until Nov. 1, it appeared that an election would not be legal. Gov. Page therefore wrote, on Aug. 24, to Hon. Redfield Proctor, Secretary of War, that he proposed to tender him the appointment, and accordingly Mr. Proctor became Mr. Edmund's successor.

The Australian Ballot Law.—The Secretary of State recently sought the opinion of ex-Judge Powers on certain mooted points in the ballot law of 1890. Respecting the claim that the act makes no provision for a second ballot for town representative, in the event of no election on the first, Mr. Powell says:

By section 1 of the act of 1890, all existing laws regulating the conduct of elections, except as modified by the act of 1890, are left in force. There is nothing in the act of 1890 that requires the ballots for town representatives to contain anything more than the names of the candidates for that office. The old law provides that ballots for town representatives shall go into a box by themselves. That box is to be turned and the votes counted at three o'clock in the afternoon, and if no choice has been made, a new ballot is ordered, and this is repeated until an election is made. The act of 1890 does not change this procedure in the least, as I read it. Hence, under the new law, an official ballot containing the names of candidates who have been nominated for town representative, as specified in the act, is to be prepared by the town clerk and used at the election, and if no choice is made on the first ballot, counted at three o'clock, a second ballot is ordered, a new distribution of official ballots is made to the voters, and the box is kept open as required by the old law. Section 20 directs that 800 ballots for every 50 votes cast at the next preceding election, shall be provided for use in choosing a representative; and if these are all used before a choice is made, the presiding officer is to supply more.

Maple Sugar.—The year 1892 will be the first year under the law giving bounty on sugar that reaches a specified standard of excellence. Out of the 4,000 sugar-makers in the country who have complied with the law, filled out blanks, and taken the preliminary steps to secure the bounty, 2,600 are in Vermont. Sugar coming up to the test of 90° by the polariscope will be entitled to a bounty of 2 cents on a pound; that less than 90° and not less than 86° to a bounty of 14 cent a pound. There will be none on sugar or sirup testing less than 80°. The penalty imposed upon any one found guilty of applying for or receiving the bounty when he is not entitled to it, is a fine not exceeding \$4,000, or imprisonment not exceeding five years, or both.

Railroads.—The Deerfield Valley Railroad has been opened from Wilmington, Windham

County, to the eastern end of Hoosac Tunnel. It is a narrow-gauge road, but the bed is graded for the standard gauge when the traffic and extension may require a heavier equipment.

The route for the proposed Black River Railroad has been surveyed. Starting from Cavendish, 31 miles south of Rutland and 22 from Bellows Falls, it follows the western bank of the Black river to Upper Falls, thence to Perkinsville, North Springfield, and Springfield, then down the Black river to Weathersfield Bow, where it is proposed to build a double-decked bridge, and cross the river to Claremont Junction, an entire distance of 29 miles. It is expected that work will begin in the spring.

A project has been under consideration the past year to connect Montpelier with Rutland by means of a "saddle-car railway" through Mad River valley. Briefly described, this railway has a single rail of sufficient strength of build and metal to sustain the heaviest loaded train. The road-bed is made of trusses placed 8 feet apart. In a level country the rail is 4 feet from the ground. In shape its upper part is similar to the standard rail. From each side of the car-trucks extend arms supporting at the end wheels which play upon a rail attached to each side of the trestle-work. Thus the "equilibrium" of the car is maintained. Attached to the truck are also rollers fitting into the lateral grooves of the rail. Derailment is thus rendered impossible. The locomotive proposed for this railway is novel, like everything else about it. The traction that is secured on standard roads by dead weight is obtained by lateral wheels bearing against the sides of the rail. Atmospheric pressure, crowding these wheels against the rail with a pressure of ten tons on each side, is the agency for providing the traction.

The company offers to build the railroad for a bonus of \$3,000 a mile. It will build six miles out of Rutland and put it in successful operation before the payment of any part of the bonus pledged by that town; when the road is brought to the town line of the next town, that town shall pay half of its part of the bonus, and the other half on completion of the road through the town; and so on. All the towns of Mad River valley manifested an active interest in the scheme, and in the meetings assurance of the necessary aid was given.

Farmers' League.—The State Farmers' League held a large meeting at Montpelier on June 5. The resolutions adopted included the following:

That we favor an equal and just system of taxation, based upon all real and personal property alike, and we demand of Congress a law to provide a graded income tax.

That we favor a sound and sufficient currency.

That we demand a free vote and fair count for every voter, and the adoption of the Australian system of voting for the whole State.

That we favor a universal compulsory common-school education, after a reasonable period, as a condition of suffrage.

That we demand a rigid limitation of all monopolies, especially such as speculate on farm and food products.

That we demand just and equitable freight and passenger rates on railroads.

That we favor the prohibition of the adulteration of

food and the traffic of intoxicating liquors as a beverage.

That we favor a rigid restriction of alien ownership of lands and immigration of criminals and paupers.

Temperance.—The charges of judicial laxity in cases coming under the prohibitory law have stirred the public mind during the year, and a large number of cases have been brought into the courts, particularly in Washington County. It has been almost impossible to get beyond conviction for the first offense in the county courts, even of men who have been for years engaged in the traffic. The method of evading the law is described in a message of Gov. Dillingham: "While, under the law as it now stands, the person convicted can not again open the place adjudged a nuisance without giving the bond prescribed by the statute, *any other person* may step in and do so. The result is that the *ostensible* proprietorship of the saloon changes as often as judgments are entered broad enough in their terms to affect the business, but the saloon itself goes on as if nothing had happened."

The movement in Washington County secured some convictions, with fines imposed, but many sentences were deferred, and some cases went to the Supreme Court on exceptions. In 1888 the Legislature enacted new penalties for violations of the prohibitory law. A new count began at this new point of departure. This fact explains why so many offenses are classified as first offenses, although the offenders may have been for years in the business. In the act of 1888 the Legislature did not deem it necessary to repeat in the amendatory act the words "and costs of prosecution" which follow the specification of penalties to be imposed. Shelter is taken behind this omission, and persons convicted of violations of the liquor laws have been relieved of the costs of prosecution, which amount to no inconsiderable sum.

Farm Lands.—With a view to advertising the resources of the State and bringing in capital to revive its industries, the Board of Agriculture sent a circular to the first selectman of every town, asking for the name and addresses of owners of any farms with fair buildings thereon which were unoccupied; also information regarding any reliable and extensive water-powers; any marble, granite, slate, or other valuable mineral deposits as yet undeveloped; any mill, tannery, or other manufacturing plants capable of further development; whether any farms previously untenanted had become occupied during the preceding year, and, if so, whether by loan or purchase, together with lists of occupied farms for sale. They then issued a pamphlet containing the information thus gained and setting forth the advantages of the State. This brought in applications amounting in September to 120 to one member of the board alone. They were distributed as follow: From Massachusetts, 32; New York, 21; New Jersey, 9; Pennsylvania, 8; Connecticut, 9; Kansas, 6; New Hampshire, 5; Rhode Island, 5; Illinois, 4; Ohio, 4; Minnesota, 4; Michigan, 3; Nebraska, 3; Canada, 3; Indiana, 2; California, 2; and North Dakota, South Dakota, Florida, Maine, Colorado, Georgia, Maryland, Montana, South Carolina, 1 each.

The Bennington Celebration.—On Aug. 19 Vermont celebrated the centennial of her ad-

mission to the Union, and at the same time dedicated a monument to commemorate the victory at Bennington, Aug. 16, 1777, under Gen. John Stark. The shaft stands on State Arms Hill, the center of the old town of Bennington, near the site of the old military store-house, which was the objective point of the expedition sent by Gen. Burgoyne under Lieut.-Col. Baum to seize military stores and provisions gathered by the Americans. The battle-field is about four miles west, and the main street of old Bennington extends eastward from the foot of the monument. Not far away, on this street, was the old Catamount Tavern, deriving its name from its sign, a stuffed catamount; it was destroyed by fire in 1871. Here the Council of Safety held its meetings in pre-Revolutionary days, during the troubles with New York.

The exercises attending the celebration began on Friday, the 14th, when the National Guard of the State went into camp in the meadow south of the Soldiers' Home, at Bennington. The exercises on Wednesday, the 19th, were attended by 20,000 to 30,000 people. The procession marched from the parade-ground, three miles distant. The monument was formally presented by ex-Gov. Benjamin F. Prescott, of New Hampshire, President of the Bennington Battle Monument Association, and accepted by Gov. Page in the name of the State of Vermont. The addresses of the day were made by Hon. Edward J. Phelps and President Harrison. At four o'clock a banquet was held at the camp grounds for 2,400 persons. A gold medal bearing a representation of the monument was given to President Harrison as a souvenir. On Wednesday evening the West Point cadets in attendance gave a dress parade, and a display of fire-works recalled in many of the pieces incidents of the historic fight. Thursday was devoted to an exhibition drill and a sham fight.

The centennial celebrations of the Revolution included one at Bennington, Aug. 16, 1877, and at that time the old scheme for a monument was revived, and an association was formed which carried the plan to a successful issue. The corner-stone of the monument was laid in 1887. The shaft is of gray-blue dolomite, rock-finish, which from its peculiar chromatic qualities gives out varying tints under varying conditions. The architectural feature that gives the monument distinction is the employment of the vertical curve in its construction, giving grace to its outline. This curve is continuous from base to apex. At the height of 200 feet a band of hammered stone marks the locality of the observation hall—a room 22 feet square and 16 feet high. Above this is a second band of hammered stone, and from this point to the apex the vertical curve becomes pronounced. An iron stairway leads to the observation chamber. The monument is 37 feet square at the base; its height to apex of cap-stone is 301 feet 10½ inches. A gilt star surmounts the whole, at an elevation from the ground of 307 feet 9½ inches.

VIRGINIA, a Southern State, one of the original thirteen, ratified the Constitution June 25, 1788; area, 42,450 square miles. The population, according to each decennial census, was 747,610 in 1790; 880,200 in 1800; 974,600 in 1810; 1,065,116 in 1820; 1,211,405 in 1830; 1,-

239,797 in 1840; 1,421,661 in 1850; 1,599,318 in 1860; 1,777,163 in 1870; 1,612,565 in 1880; and 1,655,980 in 1890. Capital, Richmond.

Government.—The following were the State officers during the year: Governor, Philip W. McKinney, Democrat; Lieutenant-Governor, J. Hoge Tyler; Secretary of State, H. W. Flournoy; First Auditor, Merton Marye; Second Auditor, Frank G. Ruffin; Treasurer, A. W. Harmon; Attorney-General, R. Taylor Scott; Superintendent of Public Instruction, John E. Massey; Commissioner of Agriculture, Thomas Whitehead; Railroad Commissioner, James C. Hill; President of the Supreme Court, Lunsford L. Lewis; Judges, B. W. Lacy, Robert A. Richardson, Drury A. Hinton, and T. T. Fanninberry.

Population by Races.—The following table shows the white and colored population of the State by counties, as reported by the Federal censuses of 1880 and 1890:

COUNTIES.	WHITE.		COLORED.	
	1890.	1880.	1890.	1880.
Accomac.....	17,463	15,015	9,314	9,373
Albemarle.....	18,193	16,570	14,245	16,429
Alexandria.....	11,294	9,972	7,381	7,564
Alleghany.....	6,988	4,454	2,000	1,192
Amelia.....	2,979	3,007	6,989	1,640
Amherst.....	9,787	10,001	7,792	8,702
Appomattox.....	5,214	5,136	4,265	4,977
Augusta.....	28,478	26,685	8,266	9,110
Bath.....	8,812	8,521	715	861
Bedford.....	19,780	18,728	11,488	12,677
Blanco.....	4,866	4,720	344	254
Botetourt.....	11,067	10,126	3,787	4,420
Brunswick.....	6,720	6,022	10,635	10,685
Buchanan.....	5,815	5,601	22	84
Buckingham.....	6,737	6,707	7,616	8,713
Campeche.....	21,694	17,897	19,889	18,606
Caroline.....	7,286	7,000	9,714	9,628
Carroll.....	15,121	12,577	860	876
Charles City.....	1,842	1,761	8,704	3,731
Charlotte.....	5,714	5,764	9,604	10,649
Chesterfield.....	15,234	18,161	10,625	11,721
Clarke.....	5,698	5,145	2,707	3,087
Craig.....	8,667	8,768	148	396
Culpeper.....	7,974	6,788	6,132	6,128
Cumberland.....	2,805	3,128	6,677	7,417
Dickenson.....	5,021	5,021	26	26
Dinwiddie.....	12,418	14,407	20,780	14,728
Elizabeth City.....	8,235	4,156	7,417	6,681
Essex.....	2,501	3,403	6,345	7,749
Fairfax.....	11,519	10,701	3,106	2,204
Fauquier.....	14,618	15,688	7,977	9,326
Floyd.....	18,198	11,681	1,010	1,774
Fluvanna.....	4,006	5,522	4,382	5,090
Franklin.....	16,075	17,009	6,710	8,825
Frederick.....	15,618	14,997	2,202	3,026
Giles.....	8,908	7,662	827	1,109
Glenchester.....	5,376	5,842	6,477	6,678
Goochland.....	4,609	4,608	6,000	6,294
Grayson.....	10,474	12,671	919	807
Greene.....	4,676	4,662	1,946	1,825
Greensville.....	2,211	2,707	5,619	8,620
Hallifax.....	14,891	13,253	19,885	20,792
Hanover.....	9,172	9,694	8,254	8,282
Harrison.....	26,225	44,872	48,888	37,758
Henry.....	9,226	8,614	8,302	7,000
HIGHLAND.....	4,200	4,715	402	449
Isle of Wight.....	6,170	6,010	5,568	4,575
James City.....	2,205	2,227	3,848	3,173
King and Queen.....	4,144	4,424	3,265	4,073
King George.....	8,416	8,162	3,005	3,003
King William.....	8,727	8,908	6,741	5,404
Lancaster.....	8,188	8,676	4,718	5,704
Lee.....	16,987	14,102	1,300	872
Loudoun.....	16,007	16,004	4,777	5,068
Louisiana.....	7,175	7,409	8,749	10,721
Lunenburg.....	4,644	4,611	4,739	4,666
Madison.....	6,212	6,006	4,716	5,070
Mathews.....	5,418	5,667	1,167	1,500
Mecklenburg.....	9,109	8,222	4,800	5,734
Middlesex.....	3,178	5,688	4,800	4,677
Montgomery.....	14,171	14,606	5,071	4,677

COUNTIES.	WHITE.		COLORED.	
	1890.	1880.	1890.	1880.
Nansemond.....	8,866	7,723	10,824	8,175
Nelson.....	9,906	9,023	6,980	7,308
New Kent.....	1,953	2,275	3,543	3,232
Norfolk.....	87,294	29,197	89,681	29,433
Northampton.....	4,704	3,889	5,008	5,203
Northumberland.....	4,723	4,446	3,162	3,433
Nottoway.....	3,941	3,012	7,041	8,144
Orange.....	6,543	6,210	6,266	6,542
Page.....	11,371	8,846	1,721	1,119
Patrick.....	12,039	10,093	2,108	2,734
Pittsylvania.....	30,712	25,387	29,226	27,200
Powhatan.....	2,843	2,726	4,443	5,091
Prince Edward.....	4,750	4,754	9,944	6,799
Prince George.....	2,893	3,255	5,166	4,262
Princess Anne.....	4,964	5,129	4,546	2,600
Prince William.....	7,170	6,580	2,935	2,452
Pulaski.....	9,946	6,303	3,144	3,536
Rappahannock.....	5,834	5,755	2,844	3,389
Richmond.....	3,991	3,806	3,155	4,523
Roanoke.....	21,037	8,273	9,049	5,943
Rockbridge.....	17,393	14,660	5,169	3,133
Rockingham.....	28,477	26,138	2,822	1,272
Russell.....	14,909	12,034	1,217	676
Scott.....	20,649	16,567	1,045	1,006
Shenandoah.....	18,311	17,193	860	1,610
Smyth.....	12,116	10,520	1,244	10,565
Southampton.....	8,464	7,447	11,611	6,406
Spottsylvania.....	8,091	5,422	6,142	1,552
Stafford.....	5,575	5,553	1,457	4,559
Surry.....	8,179	2,832	5,977	6,701
Sussex.....	9,810	3,861	7,590	1,914
Tazewell.....	16,333	10,947	3,506	1,513
Warren.....	6,767	5,958	1,513	1,479
Warwick.....	2,773	779	3,877	4,036
Washington.....	23,137	21,113	3,825	5,100
Westmoreland.....	3,636	3,746	4,763	101
Wise.....	6,796	7,671	549	2,850
Wythe.....	14,892	11,464	3,192	4,512
York.....	8,172	2,337	4,424	
The State.....	1,014,680	890,358	640,867	631,616

There were also in the State in 1890 50 Chinese, 13 Japanese, and 370 Indians.

Education.—The following public-school statistics cover the year ending July 31, 1891: Schools opened: white, 5,506; colored, 2,183; total, 7,689. Pupils enrolled: white, 219,141; colored, 123,579; total, 342,720. Daily attendance: white, 126,848; colored, 66,689; total, 193,536. Percentage of school population enrolled: white, 58; colored, 44.8; total, 52.5. Percentage of school population in daily attendance: white, 33.6; colored, 24.2; total, 29.6. Percentage of attendance: white, 73.6; colored, 73; total, 73.4. Teachers: white males, 2,097; white females, 3,613; total, 5,710. Colored males, 928; colored females, 1,080; total, 2,008. Grand total, 7,718. Average monthly salaries: male teachers, \$31.40; female teachers, \$26.66. Cost of the system for the year: for pay of teachers, \$1,273,931.53; for all other current expenses, \$213,016.13; for permanent improvements, \$150,035.18.

Charities.—At the Southwestern Lunatic Asylum, at Marion, there were 248 patients on Sept. 30, 1890; 129 patients were admitted during the year ensuing, and 113 discharged, leaving 264 remaining on Sept. 30, 1891. The average number during the year was 256. The number of patients at the Eastern Lunatic Asylum on Sept. 30, 1890, was 402. The admissions during the year following were 92, and the number discharged 73, leaving 421 on Sept. 30, 1891. The average for the year was 411.

Penitentiary.—At the end of the fiscal year, 1891, there were 1,192 convicts in the State

Penitentiary, divided as follows: white men, 212; colored men, 890; white women, 2; colored women, 95. The earnings of convicts for the year exceeded the expenses of the institution by \$36,170.18.

Tobacco.—According to the Federal census of 1890, the total number of tobacco planters in the State during the census year was 24,034; the total area devoted to tobacco, 110,579 acres; the total product, 48,522,655 pounds; and the value of the crop to the producer, \$4,323,649.

Coal.—The total output of coal in the State during the year ended June 30, 1880, as reported to the tenth census, was 43,079 short tons of bituminous coal, valued at \$99,802 at the mines, and 2,817 short tons of anthracite, valued at \$8,290 at the mines. During the calendar year 1889 the quantity of bituminous coal mined in the State, as reported to the eleventh census, was 865,786 short tons, valued at \$804,475, an average of 93 cents a ton at the mines. This great increase during the decade is attributed to the developments in the Flat Top and Clinch Valley districts. The total number of employes engaged in or about coal mines in 1889 was 1,555; the amount of wages paid them was \$621,266; and the expense of mining the product of that year, \$681,476.

Legislative Session.—The biennial session of the General Assembly began on Dec. 2. Early in the proceedings, Secretary Flournoy, First Auditor Marye, Second Auditor Ruffin, Treasurer Harmon, and Railroad Commissioner Hill were re-elected. On Dec. 15 United States Senator John W. Daniel, Democrat, was re-elected for the full term of six years, receiving all the votes cast in each House. The one Republican Senator and the two Republican Assemblymen did not vote. At the close of the year the session had not been completed.

Debt Settlement.—The year 1891 will be notable in the history of Virginia as marking the termination of the long-standing controversy between the State and its bondholders. By a joint resolution passed on March 5, 1890, the Legislature had offered to reopen negotiations with the bondholders, and had appointed for that purpose a commission, consisting of the Governor, the Lieutenant-Governor, and a few members of the Senate and House of Delegates. This commission was authorized to agree with representatives of the bondholders upon any terms of settlement, provided they were not less favorable to the State than the provisions of the Riddleberger act. Early in May, 1891, the Governor received a communication from a committee representing a large majority of the bondholders, asking for a conference at an early day, and June 2 was fixed upon for the meeting. At this time the committee submitted the following statement and proposition: "Of the debt proposed to be funded there is now outstanding, owned by the public, an apparent maximum, as of July 1, 1891, approximating \$28,000,000. Of this amount the bondholders' committee control not less than \$23,000,000 (principal and interest), to said date; and the committee hereby proposes to surrender the same, together with any additional obligations which may be deposited, on the basis of \$20,000,000 of new 3-per-cent. bonds for the entire \$28,000,000." This proposal the

Virginia commission, under date of June 3, refused to accept, on the ground that it had no authority to do so, and that the State would be unable to raise from its revenues a sum sufficient to meet, with other necessary expenses, the accruing annual interest required by such a settlement. Later in the year a second conference was arranged for Nov. 17, and on that day the bondholders' committee submitted an amended proposition, saying that "the committee proposes to surrender, as of July 1, 1891, not less than \$23,000,000 (principal and interest), for such a proportion of \$19,000,000 of new 3-per-cent. bonds as the amount surrendered bears to \$28,000,000." This proposition also was rejected by the commission. Thereupon a sub-committee of two from the commission was appointed to confer with a sub-committee of two from the bondholders' committee, with a view of arriving at some basis for further negotiation. As a result of this action, the Virginia commission, on Nov. 18, suggested to the committee a willingness to report favorably to the Legislature a proposition to settle the outstanding unsettled debt on the basis of an issue of new bonds, not to exceed a maximum of \$18,000,000, to be exchanged for outstanding unsettled obligations in the proportion of 18 to 28; such new bonds to run one hundred years, and to bear 2 per cent. interest for ten years and 3 per cent. for ninety years. In reply to this suggestion, the bondholders' committee said they would communicate it to their depositing security-holders, but would not advise its acceptance. Continuing, the committee said: "We will, however, cheer-

fully recommend either of the following propositions: A 3-per-cent. one hundred-year bond, similar in form and features to the Riddelsberger bonds, for \$18,000,000; or a bond similar in form and feature to the Riddelsberger bonds, for \$19,000,000 at one hundred years, the first five years' interest to run at 2 per cent., the next five at 2 1/2 per cent., the balance of the term, 3 per cent." In reply to this, the commission, on Nov. 19, offered to report favorably to the Legislature the \$19,000,000 proposition, provided it should be so modified as to restrict the interest annually payable to 2 per cent. for ten years, and 3 per cent. for the remaining ninety years; the bonds and interest obligations to be of the same general character as those provided by the Riddelsberger bill, and it being distinctly understood that the coupons or other interest obligations are not to be receivable for taxes. This last proposition the bondholders' committee agreed to recommend to their constituents, and the conference thereupon ended. On Dec. 18 a meeting of the British bondholders was held in London, at which the terms of the proposed settlement were discussed, and the meeting, by a vote of 39 to 17, agreed to accept the action of the committee. This vote was communicated to the Virginia commission, and on Jan. 14, 1892, Gov. McKenney transmitted to the Legislature a special message, containing the report of the commission, and advising the ratification of the terms agreed upon.

Later in the session the Legislature accepted the settlement, and passed an act providing for the issue of new bonds.

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WASHINGTON, a Pacific coast State, admitted to the Union Nov. 11, 1889; area, 69,180 square miles; population, according to the census of 1890, 349,390. Capital, Olympia.

Government.—The following were the State officers during the year: Governor, Elisha P. Ferry, Republican; Lieutenant-Governor, Charles E. Laughton; Secretary of State, Allen Weir; Treasurer, A. A. Lindsley; Auditor, T. M. Reed; Attorney-General, W. C. Jones; Superintendent of Public Instruction, R. B. Bryan; Commissioner of Public Lands, W. T. Forrest; Chief Justice of the Supreme Court, T. J. Anders; Associate Justices, Elmore Scott, R. O. Dunbar, T. L. Stiles, J. P. Hoyt.

The Senate consists of 30 Republicans and 4 Democrats; the House, of 61 Republicans and 17 Democrats.

Legislative Session.—The regular biennial session of the Legislature was held in January. The most important action taken was the passage of a bill to reduce certain freight rates on railroads. Gov. Ferry was absent from the State, and Lieut.-Gov. Laughton, acting as Governor, vetoed the bill. In his veto message he gave his reasons for not approving the measure, as follows:

1. It is unconstitutional.
2. It is contrary to the established principles of law in force in this State.
3. It is a bill which will work an injury to the

State, to the development of its interests, and to its people.

1. The law is unconstitutional, because it is class legislation. It favors the producer of wheat, flour, barley, and mill stuffs, and discriminates against the producer of other products, and against the other citizens of our State who may desire to ship any other class of freight over the lines of a common carrier within the State. It places a railroad company in such a position as to violate section 15 of Article XII of the State Constitution, which prescribes that "No discrimination in charges or facilities for transportation shall be made by any railroad or other transportation company between places or persons." It is also in direct violation of section 18 of Article XII of the Constitution, which prescribes that "The Legislature shall pass laws establishing reasonable maximum rates of charges for the transportation of passengers and freight, and to correct abuses and to prevent discrimination and extortion in the rates of freight." Instead of preventing this discrimination between rates of freight, the bill, by its expressed terms, discriminates in the most palpable manner. Again, the Legislature in passing this bill has not passed a law "establishing reasonable maximum rates of charges for the transportation of passengers and freight," but it has passed a bill establishing a maximum rate of charges for certain commodities or products alone, which, when taken together with all other products of the State requiring transportation, constitute "freight" as contemplated in section 18. The act is therefore in plain and open violation of the provisions herebefore quoted from sections 15 and 18 of Article XII of the Constitution. It being unconstitutional, it requires neither legal authority nor further

argument to justify the assertion that it should not become a law.

2. There are other valid legal grounds why such a law should not be passed. The Congress of the United States has created an interstate commerce commission which has power to regulate freight rates and adjust the grievances, if any there be, which are attempted to be adjusted by the bill under consideration. An act such as this not only discriminates against citizens of the State, but it discriminates against citizens in the neighboring States of Idaho and Montana, who produce the same commodities as those mentioned in the bill and who are compelled to ship such products to coast points for transportation to market, or suffer a loss by shipping them a greater distance to Eastern points. Common carriers, under this act, charge the producer of wheat, barley, flour, and mill stuffs, who reside in Montana or Idaho a much greater rate than the producer of the same commodities in this State. Under the laws of comity between States, and under the principle which should govern legislation in all matters where State power is brought into conflict with the Federal power, it is but justice and right that the legislative and executive power of a State should, as far as possible, assist the citizens of its sister States and the legislative and executive power of the United States, in guaranteeing to protect the citizens of such sister States against unjust discrimination and infringement upon legislation already prescribed by Congress for their protection. In my opinion, this law, instead of taking such a course, materially injures and curtails the rights of the citizens of the sister States in protecting themselves from such discrimination, and it certainly conflicts with the provisions of the act of Congress known as the Interstate Commerce act. It becomes thereby an infringement upon those rules of policy and law which should always exist between the States, and between the States and the United States. It is therefore specially within the province of the executive of a State to advise against the enactment of such a law.

Education.—In the school year 1890-'91 the school census numbered 100,532 persons, an increase of nearly 14 per cent. over the preceding year. The enrollment was 69,737, an increase of nearly 25 per cent. Franklin County has the smallest school population, 96, and King County the largest, 15,484. The number of school-houses built during the year was 235, the total number now in the State being 1,275. The value of school property is over \$3,000,000. The average salaries of teachers are: Men, \$52 a month; women, \$42. The current expenses of the schools during the year aggregated \$932,491. The indebtedness of the school districts is over \$3,000,000. The State Normal School, at Ellensburg, was opened in September. Olympic University (Congregational), at Olympia, has entered into a contract for the erection of buildings, which are to be completed before May 1, 1893.

Fruits.—The Secretary of Agriculture, in a recent report, says: "In eastern Washington, along the river valleys and foot hills that separate that State from Idaho, a great stretch of semi-humid land exists, in which the culture of temperate fruits, small berries, and valuable garden products is already being brought to a high degree of perfection. The display of fruits in the orchards already existing there is simply astonishing as to size, quantity, and quality. In the valley of Salmon and Snake rivers, of the Columbia, and other streams in Idaho, eastern Washington, and Oregon, a large number of bores have been made at quite high altitudes,

and during the year 35 or 40 artesian wells have been sunk for water, which rises with great pressure and flows with considerable volume.

Borax Beds.—Extensive beds of borax in Douglas County, which were discovered in 1875, were unworked and unclaimed until the summer of 1891, when work was begun upon them. There is a solid deposit of borax 8½ feet thick, having the appearance of a lake a mile and a half long and half a mile wide. Wherever a hole is cut, a fresh deposit bubbles up from the bottom and fills it in a few hours. The borax is remarkably pure and translucent. It is said that there are in the vicinity abundant springs of fresh water unaffected by the salt deposit.

Precious Metals.—Wells, Fargo & Co.'s report of precious metals produced in 1891 gives the following figures for Washington: Gold dust and bullion by express, \$187,000; gold dust and bullion by other conveyances, \$30,000; silver bullion by express, \$112,000; total, \$329,000.

Industrial Fair.—The Western Washington Industrial Exposition was formally opened in Tacoma on Sept. 10, with an attendance of 6,000 people. The main building was 280 by 300 feet and two stories high, and was illuminated by 1,150 electric lights. It was divided into main exhibit hall, machinery hall, art gallery, ladies' fancy-work department, mineral department, historical and educational department, etc. The timber exhibit was especially fine. The building was erected in ninety days, and cost \$72,000. It is the property of a stock company.

The Columbian Exposition.—The State appropriated \$50,000 for the year 1891 for an exhibit at the Chicago World's Fair. This is to be managed by a commission consisting of one man from each county. The Governor has the power to remove any member for sufficient cause, but all vacancies are filled by the commission. In order to facilitate matters the members appointed a commissioner, whose salary shall not exceed \$150 a month, who will exercise all the executive powers and functions that may be necessary to secure a complete and creditable display. He is to have personal charge of the solicitation, transportation, arrangement, and exhibition of the objects sent to the exhibition, but, of course, under the supervision of the commission. The State Mining Bureau will co-operate with the commissioners, and will forward all the mineral collections and cabinets belonging to the State.

Destructive Storms.—On Dec. 7 a great storm swept over Clallam County, which lies along the southern border of the Strait of Juan de Fuca. Thousands of forest trees were prostrated, square miles were covered with tangled masses of timber. The new county road, which had just been completed at a cost of \$100,000, was almost destroyed. The total loss was estimated at millions of dollars. On Dec. 28 another terrible storm occurred, which did much damage to the shipping on Puget Sound.

Tide Lands.—Section 1 of Article XVII of the State Constitution declares that "the State of Washington asserts its ownership to the beds and shores of all navigable waters in the State up to and including the line of ordinary high tide in

waters where the tide ebbs and flows, and up to and including the line of ordinary high water within the banks of all navigable rivers and lakes: *Provided*, That this section shall not be construed so as to deprive any person from asserting his claim to vested rights in the courts of the State." But Judge Hanford, in a decision of the court at Tacoma, decided that the tide lands are owned by the United States Government, and not by the State of Washington.

Naval Station.—A new United States naval station was established at Port Orchard in September. One hundred and forty five acres have been taken by the Government, and additional land will probably be acquired. Preliminary surveys and borings for the construction of a dry dock were made. The official name is Puget Sound Naval Station.

WEST INDIES. The islands of the Greater and Lesser Antilles, with the exception of the Spanish colonies of Cuba and Puerto Rico and the island of Hayti occupied by the two black republics, are dependencies of Great Britain, Denmark, France, and the Netherlands.

Jamaica.—The island of Jamaica is a partly self-governing British colony, having a Legislative Council presided over by the Governor, in which 9 members are elected—5 are nominated by the Crown and 4 are official. The present Governor is Sir Henry Arthur Blake. The area of Jamaica is 4,193 square miles, and the population in 1891 was 639,491. Dependencies of the colony are Turk's and Caicos islands, with an area of 223 square miles and 4,778 inhabitants, and Cazman islands, with an area of 225 square miles and 2,400 inhabitants. Kingston, the capital, has about 40,000 inhabitants. Jamaica in 1881 had 14,432 white inhabitants, 109,946 of mixed blood, 444,186 negroes, and about 12,000 Chinese and Indian coolies. The revenue in 1889 was £695,000 and the expenditure £646,000, as estimated in the budget. There is a debt of £1,588. The imports in 1889 were valued at £1,598,000 and the exports at £1,615,000. The tonnage entered and cleared was 1,075,000 tons, exclusive of coasters. There are 93 miles of railroad and 698 miles of telegraphs. The number of letters that were sent through the post-office in 1888 was 1,408,453. The commerce is chiefly with Great Britain and with the United States. The new commercial treaty admitting Jamaican sugar and coffee free into the United States is favorable to the development of trade with American ports, as 63 articles of American produce and manufacture are by its terms admitted free of duty and 12 others at reduced rates. American cars and locomotives and many articles of ordinary consumption have already displaced British manufactures. The values of the leading exports in 1888 were as follow: Coffee, \$1,555,769; logwood, \$1,709,265; raw sugar, \$1,395,865; bananas, \$1,320,052; rum, \$979,712; oranges, \$313,046; pimento, \$216,483; ginger, \$94,200.

Leeward Islands.—The group, which is divided into 5 presidencies, is under control of a Governor, at present Sir William Frederick Haynes Smith, who is assisted by an Executive Council and a Federal Legislative Council consisting of 10 elected and 10 nominated members. The area of the islands and their population in 1881 were as follow:

ISLANDS.	Square miles.	Population.
Virgin Islands,	64	2,267
Anguilla,	35	2,113
St. Kitt's,	68	25,117
Nevis and Redonda,	46	11,764
Barbuda,	78	24,964
Antigua,	47	21,401
Montserrat,	32	11,401
Dominica,	291	29,469
Total,	706	124,160

* In 1889.

† In 1891.

There were about 5,000 white, 23,000 colored, and 94,000 black inhabitants in 1884. In most of the islands sugar and molasses are the main products. In some, fruit growing is increasing. Other products are salt and phosphate of lime. The treasury in the Virgin islands received £2,000 and disbursed an equal sum in 1889; the imports were valued at £3,000 and the exports at £4,000. The revenue of St. Kitt's and Nevis was £40,000 and expenditure £38,000; imports, £178,000; exports, £343,000. Antigua had a revenue of £43,000 and imported merchandise of the value of £166,000, while the exports amounted to £267,000. In Montserrat the revenue was £6,000; the imports were valued at £25,000 and the exports at £28,000. Dominica had a revenue of £21,000; imports, £57,000; exports, £47,000. The public debt of these colonies was increased from £80,819 to £91,631 during the course of that year. In 1891 there was a total failure of food crops in Anguilla, owing to drought.

Windward Islands.—The Windward group has a common Governor, Sir W. F. Holy-Hutchinson, but no federal legislative body. Each colony has an administrator and a Legislative Council, the members of which are officials and persons nominated by the Crown. Grenada, with an area of 166 square miles and a population in the beginning of 1890 of 50,393, including 1,961 coolies, had a revenue of £50,000 and £51,000 of expenditures in 1889. The imports amounted to £174,000 and the exports to £196,000. St. Vincent, with an area of 147 square miles and 47,933 inhabitants in 1890, had a revenue of £28,000, while the disbursements were £22,000. The imports were £98,000 and the exports £125,000. St. Lucia is 237 square miles in extent and contains 49,685 inhabitants. The treasury receipts in 1889 were £48,000; disbursements, £46,000; imports, £172,000; exports, £162,000. Sugar, rum, cacao, pine-apples, and other fruits, spices, logwood, cotton, coffee, arrow-root, and timber are among the products. Cotton and coffee have to some extent displaced sugar-cane.

Bahamas.—The area of the Bahamas is 5,390 square miles. The population in 1889 was 45,500. The white population in 1881 was 11,000. Nassau, the capital, has 5,000 inhabitants. The Governor is Sir Ambrose Shea. He is assisted by an Executive Council and a Legislative Council, each of 9 members, and there is a Legislative Assembly of 29 members elected under a low property limitation by popular suffrage. The revenue in 1889 was £46,000 and the expenditure £48,000. In 1890 the revenue was £54,826 and expenditure £48,688. There was a debt of £83,000. The imports were valued at £170,000 and the exports at £130,000. In 1890 the imports showed an increase of 38 per cent. and the ex-

ports of 35 per cent., the value of the former being £222,512 and of the latter £168,121. This development is due almost entirely to the extension of the new sisal-fiber culture. There were 4,100 acres planted with 2,500,000 of the plants in 1890, and 1,300,000 more plants were growing in nurseries. The plants take three years more to mature in the nursery. Apart from this the chief product of the soil is the pine-apple. Cotton is grown to a small extent, and sweet potatoes and corn are raised for home consumption. Oranges also are exported, and fruit culture is increasing. Sponge-fishing, formerly the chief industry, is carried on by the natives, who also gather conch shells, pearl shells, turtles, and ambergris. The value of sponges obtained in 1889 was £51,886. In 1890 the amount realized was £63,099. The export of fresh pine-apples was valued at £25,553, and that of preserved pine-apples at £4,500. In 1890 the export of pine-apples rose to £49,795, and that of the canned fruit to £6,126. The export of oranges was £3,961, as compared with £3,040 in 1889. The value of the cotton crop increased from £1,074 to £1,593. In 1891 mail steam communication between the several islands was established. A cable to connect the islands with Florida and the telegraph system of the world had been decided on. The development of the cultivation of sisal fiber is likely to make an extraordinary difference in the position which this group of rocks and islands has hitherto held among British possessions. The conversion of what was once looked upon as a useless weed into a source of wealth has been sudden. Only four years ago the natives were complaining of the impossibility of eradicating the aloe-like shrub from the lime soil of their plantations. It grew wild everywhere; its long, intractable leaves obtruded themselves in the midst of every crop; the most determined efforts at repression were unavailing. The commercial experience of Sir Ambrose Shea enabled him to perceive the possible value of such a fiber as that contained in the sisal leaves. Experts from Newfoundland were the first to confirm the opinion which he had formed of the fiber. It was recognized as possessing qualities equal to those of the best rope fibers. Negotiations were entered into for its cultivation. Early in 1890 a bounty amounting to £4 10s. per ton exported was granted for a period of several years, and capital began to flow into the islands. Government lands which had previously been regarded as waste were taken up for the cultivation of the fiber, and the price of them was raised from 5s. to £4 an acre. Investors were promised that not more than 100,000 acres would be allotted to this culture for the first ten years. Within a year and a half this quantity of land had been taken up. It has been found that an acre of land will produce a yearly crop of about half a ton of fiber. The sisal plants last from twelve to fifteen years. They are planted in rows with young ones coming between them, so that the crop is practically self-renewing, while the soil is inexhaustible. The preparation for market consists simply in crushing the leaves through rollers and washing away the juicy matter which is thus reduced to pulp. Very little labor is required, and, while the price of the fiber ranges up to £34 a ton, the cost of production and delivery averages about £12.

From the nature of the cultivation, which demands little outlay of capital, it is presumable that the laboring population of the islands will desire to take part in it on their own account, and provision has been made that any native head of a family who is not already in possession of land may, upon application to the Government, receive a grant of 10 acres at the old price of 5s. an acre, to be paid out of the first year's crop. These grants are outside the 100,000-acre limit, but, in order to guard the natives from the temptation to sell as soon as the price of land is found to rise, they are made in the form of an untransferable license of occupation which must run for twenty years before the freehold title can be acquired. From the sale of Government land a fund of £50,000 has been created which is available for the purposes of public works.

Barbadoes.—The island of Barbadoes has an area of 166 square miles. The population in 1889 was 182,000. The Governor now in office is Sir Walter J. Kendall. There is, besides an Executive and a Legislative Council, a House of Assembly of 24 members elected annually by the colonists. The receipts of the Government in 1889 were £175,000, and the expenses £146,000. The imports amounted to £1,211,000, and the exports to £1,030,000. Sugar is the staple product, and since the colonial sugar was supplanted in the English market by bounty-fed beet sugar the bulk of the crop, from 87 to 95 per cent., has gone to the United States. American flour has been used by the islanders to the exclusion of all other sorts, and from this and the imports of meat, bread, salted meats, horses, mules, oil, corn, oats, meal, butter, cheese, lard, kerosene, and staves and shooks, duties have been collected amounting to £37,000 a year. In order to secure the benefits of the reciprocity clause of the McKinley tariff act the Government has removed or reduced these duties.

Trinidad.—Trinidad and its dependency, Tobago, lie near the mouth of the Orinoco river. The Governor is Sir William Robinson. The government is that of a Crown colony. The area of Trinidad is 1,754 square miles, that of Tobago 114 square miles. The former had 196,172 and the latter 20,626 inhabitants in 1889. The products are sugar, cacao, coffee, pea-nuts, cocoa-nuts, and asphaltum, which is obtained from a large pitch lake in the center of the island. Fruit growing is on the increase, and the cultivation of the hemp fiber has been started. In Tobago, which was annexed to Trinidad in 1889, cotton and tobacco have begun to be cultivated. The revenue in 1889 was £453,000, and the expenditure \$463,000. The imports were valued at £2,094,000, and the exports at £2,309,000. The immigrants, who are chiefly coolies from Madras, numbered 3,252, and the emigration was 688. Commerce with the United States has in late years grown at the expense of the trade with Great Britain and British possessions. The trade with the United States increased from £591,557 in 1881 to £1,153,563 in 1890, or from less than one eighth to more than one fourth of the whole trade of the colony. The tonnage entered and cleared has increased from 877,611 to 1,276,970 tons in ten years. Trinidad has 54 miles of railroads and 717 miles of telegraphs.

The Danish Antilles.—The possessions of Denmark consist of three small islands. Santa Cruz or St. Croix has an area of 74 square miles, and a population of 18,430 individuals, of whom about 5,000 are white. St. Thomas has an area of 23 square miles, and 14,389 inhabitants, according to the preliminary returns of the census of Feb. 1, 1890. St. John, with an area of 21 square miles, had at the same date a population of 944. Christian Hans Arendrup has been Governor since 1881. He is assisted by an Executive Council and by a Legislative Council consisting partly of elective and partly of nominated members. St. John and St. Thomas have a Colonial Council in common, and St. Croix a separate one. The principal products of St. Croix are rum, sugar, and molasses. St. Thomas has a rich soil, producing vegetables and fruits in great variety, and tobacco and coffee of fine quality. This island is a free port. The steamships of the European and American lines stop there, and Charlotte Amalia, a town of 13,000 inhabitants, is the chief commercial depot for many of the West Indian islands. The commerce of the islands is chiefly with Denmark, the United States, and Great Britain. In the year ending June 30, 1890, the United States imported from the Danish colony merchandise of the value of \$588,739, and exported to the islands goods of the value of \$794,293. The total imports into St. Thomas for the year ending March 31, 1889, were \$1,126,000, of which \$343,000 came from the United States and an equal amount from Great Britain.

The French Colonies.—Guadeloupe, in the Lesser Antilles, has an area of 360 square miles and a population of 182,182. The Governor is assisted by a Legislative Council, the members of which are elected. The chief town is Pointe-à-Pitre, with a population of 15,172. The political capital, Basse Terre, has 9,500 inhabitants. The receipts in 1889 balanced expenditures and amounted to 5,027,130 francs. The expenditure of France was 2,122,085 francs in 1890. There is a debt of 1,000,000 francs. There are 60 miles of railroad. The trade is mainly with France and the United States. The total value of the imports in 1889 was 24,700,000 francs, and that of the exports 23,500,000 francs. The products are sugar, coffee, cacao, vanilla, spices, manioc, yams, rice, maize, vegetables, tobacco, ramie fiber, cotton, India-rubber, cabinet woods, anatto, sheep, pigs, and cattle. The dependencies of Guadeloupe are the islands of La Désirade, Les Saintes and Petite-Terre, Marie Galante, St. Barthélemy, and San Martin, with a combined area of 100 square miles and 23,605 inhabitants.

Martinique, in the Caribbean Sea, has an area of 380 square miles. The population in 1888 was 175,863. St. Pierre, the chief town, had 18,707 inhabitants. The chief product is sugar. All tropical fruits and vegetables grow prolifically, and bananas are an important article of export. The chief imports are flour, fertilizers, rice, salted fish, and cotton goods. The exports consist mainly of sugar and liquors. The total value of the imports in 1888 was 22,900,000 francs, and that of exports 21,500,000 francs. There are 120 miles of railroad. The receipts and expenditures in 1889 balanced at

3,523,227 francs. The expenditure of the home Government was 2,090,533 francs in 1890. The colony is administered by a Governor, and has an elective General Council.

The Dutch Antilles.—The Dutch colony of Curaçao consists of the islands of Curaçao, Bonaire, Aruba, a part of San Martin, St. Eustachius, and Saba. Curaçao has an area of 219 square miles and 25,877 inhabitants. Bonaire, with an area of 95 square miles, has 4,701 inhabitants; Aruba, 69 square miles in extent, has 7,365; the Dutch or southern part of San Martin supports 4,431 people on 17 square miles; and St. Eustachius and Saba, one 7 and the other 5 square miles in extent, are peopled respectively by 1,563 and 2,524 persons. The colony is administered by a Governor, who is assisted by a Council composed of four members nominated by the Crown, one being the Attorney-General. The revenue for 1890 was 597,600 guilders, as estimated in the budget, and the expenditure was 672,000 guilders, the deficiency being supplied by the home Government. The budget for 1891 makes receipts and expenses balance at 681,211 guilders. The imports in 1887 were valued at 3,240,006 guilders, and the exports of the smaller islands at 510,200 guilders. In 1888 the imports were 2,819,211 guilders, and the exports, exclusive of Curaçao, 569,314 guilders. The chief products are corn, beans, cattle, lime, salt, and fruits. The rinds of oranges are shipped to Holland, where they are used for the manufacture of the liquor known as Curaçao. In 1889-'90 the imports from the Dutch Antilles into the United States were \$194,036 in value, and the exports from the United States to these islands were \$609,693.

WEST VIRGINIA, a Southern State, admitted to the Union June 19, 1863; area, 24,780 square miles; population in 1890, 762,794. Capital, Charleston.

Government.—The following were the State officers during the year: Governor, A. B. Fleming; Secretary of State, William A. Ohley; Treasurer, William G. Thompson; Auditor, Patrick F. Duffey; Attorney-General, Alfred Caldwell; Superintendent of Free Schools, Benjamin S. Morgan; Adjutant-General, R. H. Oxley; President of the Supreme Court, Daniel B. Lucas; Judges, Henry Brannon, J. W. English, H. A. Holt; Clerk, O. S. Long—all Democrats.

The Senate consists of 16 Democrats and 10 Republicans; the House, of 44 Democrats and 21 Republicans.

Finances.—The total debt, less the sinking fund, in 1890 was \$184,511, against \$127,511 in 1880. The bonded debt in 1890 was \$135,511; the floating debt, \$49,000. The debt *per capita*, therefore, less the sinking fund, in 1890 was 24 cents, against 21 cents in 1880. The State's appropriation to the World's Fair at Chicago amounts to \$40,000, being \$20,000 more than the appropriation made for the Centennial Exposition of 1876.

Board of Health.—Gov. Fleming appointed, May 28, 1891, for First District, Dr. William M. Late, Bridgeport, Harrison County, for the term ending June 1, 1894; Dr. L. D. Wilson, Wheeling, for the term ending June 1, 1895. Second District, Dr. L. S. Brock, Morgantown, for the

term ending June 1, 1893. Third District, Dr. B. F. Irons, Pickaway, Monroe County, for the term ending June 1, 1893. Dr. W. P. Ewing, Charleston, for the term ending June 1, 1894. Fourth District, Dr. I. P. Carpenter, Pocahontas County.

Education.—The per cent. of gain in public-school enrollment to June 26, 1891, was 34.42, while the gain in population was 23.34. In Charleston, the enumeration for 1890 was 2,128, and the attendance 1,548.

On June 23, 1891, the Board of Education for the independent district of Charleston resolved to advertise an election asking for bonds for \$30,000, of which \$10,000 are to be used for a school-house for colored children.

To the West Virginia Colored Institute Gov. Fleming appointed, on May 28, 1891, as regents, Benjamin W. Byrne and Benjamin F. Wyatt, Charleston; Charles H. Turner, Parkersburg; John A. Myers, Morgantown; and Samuel P. Haven, Glen Easton, Marshall County. On May 28, 1891, he appointed to the board of regents for the schools for the deaf and the blind, W. S. Wiley, New Martinsville, Wetzel County, to fill a vacancy caused by the death of Dr. Baird; D. C. Casto, Elizabeth, Wirt County, to fill a vacancy caused by the resignation of W. P. Vicars.

Agriculture.—The first State board met at the Capitol in Charleston on May 4, 1891. President, H. M. Turner; Secretary, Secretary of the State Grange. On May 14 the Secretary of the Interior, at Washington, certified to the Treasury the warrant for \$15,000, being the money due to West Virginia as her share of the money appropriated for the support of agricultural colleges for the fiscal year ending in June, 1890. The delay in payment was due to the raising of a question as to the discrimination against colored pupils in the West Virginia College. The money for 1891 will be paid when the report is submitted as to the disposition of the money appropriated for 1890.

Game Laws.—The following amendments to the game laws have been passed: No quail (Virginia partridge) from Dec. 20 to Nov. 1; wild turkey, Jan. 1 to Sept. 15; ruffed grouse, pheasant, pinnated grouse, prairie chicken, etc., Jan. 1 to Nov. 1; duck, wild duck, woodchuck, blue-winged teal, etc., April 1 to Oct. 1; snipe, only between March 1 and July 1; woodcock, only from July 1 to Sept. 15. It is made unlawful at any time to entrap, seine, or destroy any Virginia partridge, and, except by shoulder gun, to hunt.

World's Fair Commission.—The commission appointed to take charge of West Virginia's exhibit at the Columbian Exposition is as follows: Governor, Hon. W. N. Chancellor (at a salary of \$1,200 per annum); Treasurer, Hon. George M. Bowers (1 per cent. on the disbursements); Secretary, W. C. McKay (\$600 per annum).

Coal.—According to the annual report of the State Mine Inspectors during the year ending June 30, 1891, the total coal production was 7,381,430 tons of 2,240 pounds each. The coke production was 1,238,418 tons. There were 179 mines in operation, in which 14,178 men were employed. There were 4,117 coke ovens in operation, and 777 more were in process of building. The average number of months worked was

104; the average earnings of miners per month, \$39.25.

Petroleum.—Out of a total production of 34,820,306 barrels of petroleum in the United States in 1889, West Virginia, according to a bulletin of the Census Office, produced 358,269. Oil was produced in eleven States, West Virginia coming fourth on the list.

Land.—Five thousand acres of timber land in Preston County were sold this year for \$50,000 to a Philadelphia syndicate.

WISCONSIN. a Western State, admitted to the Union May 29, 1848; area, 56,040 square miles. The population, according to each decennial census since admission, was 305,391 in 1850; 775,881 in 1860; 1,054,670 in 1870; 1,315,497 in 1880; and 1,686,880 in 1890. Capital, Madison.

Government.—The following were the State officers during the year: Governor, George W. Peck, Democrat; Lieutenant-Governor, Charles Jonas; Secretary of State, Thomas J. Cunningham; Treasurer, John Hunner; Attorney-General, James L. O'Connor; Superintendent of Public Schools, Oliver E. Wells; Insurance Commissioner, Wilbur M. Root; Railroad Commissioner, Thomas Thompson; Chief Justice of the Supreme Court, Orsamus Cole; Associate Justices, Harlow S.orton, John B. Cassoday, William P. Lyon, and David Taylor, who died on April 3 and was succeeded on May 4 by John B. Winslow, by appointment of the Governor.

Legislative Session.—The regular biennial session of the General Assembly began on Jan. 14 and ended on April 25. Both Houses were controlled by the Democrats. On Jan. 27 William F. Vilas, Democrat, was elected United States Senator for the term of six years, to succeed John C. Spooner, Republican, the vote in each House being as follows: Senate, Spooner 14, Vilas 16; House, Spooner 31, Vilas 66. The Bennett school law of 1889, which was bitterly assailed during the political contest of 1890, was repealed early in the session and a new compulsory education law was enacted, which provides that "every parent or other person having under his control any child between the ages of seven and thirteen years shall cause such child to attend, for at least twelve weeks in each and every school year, some public or private school; provided, however, that this act shall not apply to any child that has been or is being otherwise instructed for a like period of time in the elementary branches of learning, or that has already acquired such knowledge, or whose mental or physical condition is such as to render his or her attendance at school and application to study inexpedient or impracticable, or who lives more than two miles from any school by the nearest traveled road, or who is excused for sufficient reasons by any court of record. Every person who shall violate the provisions of this section shall, upon conviction thereof, be fined in any sum not less than three dollars nor more than twenty dollars for each and every offense." The local school officials were required to prosecute offenses under this act, and they may appoint officers to apprehend truants.

In order to put an end to the practice of State Treasurers in collecting for their own use the interest on public moneys which they had depos-

ited in banks at their own risk and without warrant of law, an act was passed giving the Treasurer legal authority to deposit in certain banks at the risk of the State, and requiring that in such cases the interest be turned over to the State. Any person who shall hereafter give or pay to any State Treasurer interest on deposits or any other sum of money, except as expressly authorized by law, shall be deemed guilty of bribery. By another act the Commissioners of Public Lands, with the approval of the Governor, were authorized to settle any claims of the State against past State Treasurers arising out of their retention of interest on public moneys.

The State was redistricted for members of the Senate and Assembly, and the following new congressional districts were established:

First.—The counties of Racine, Kenosha, Walworth, Rock, Green, and Lafayette.

Second.—Counties of Jefferson, Dodge, Dane, and Columbia.

Third.—Counties of Adams, Juneau, Vernon, Sauk, Richland, Crawford, Grant, and Iowa.

Fourth.—The First, Second, Third, Fourth, Fifth, Sixth, Seventh, Eighth, Ninth, Eleventh, Twelfth, Fourteenth, Fifteenth, Sixteenth, Seventeenth, and Eighteenth Wards of the city of Milwaukee, and the towns of Franklin, Greenfield, Lake, and Oak Creek in Milwaukee County.

Fifth.—Counties of Sheboygan, Ozaukee, Washington, and Waukesha, and the Tenth and Thirteenth Wards of the city of Milwaukee, and the towns of Granville, Milwaukee, and Wauwatosa in Milwaukee County.

Sixth.—Counties of Waushara, Marquette, Green Lake, Fond du Lac, Winnebago, Calumet, and Manitowish.

Seventh.—Counties of Pepin, Eau Claire, Buffalo, Trempealeau, Jackson, Monroe, and La Crosse.

Eighth.—Counties of Wood, Portage, Waupaca, Outagamie, Brown, Kewaunee, and Door.

Ninth.—Counties of Clark, Taylor, Price, Ashland, Oneida, Lincoln, Marathon, Shawano, Langlade, Forest, Florence, Marinette, and Oconto.

Tenth.—Counties of Bayfield, Douglas, Burnett, Sawyer, Washburn, Polk, Barron, Chippewa, St. Croix, Dunn, and Pierce.

A ballot-reform law enacted at this session applies to all elections except those for town and village officers and those held in cities of 50,000 inhabitants or more.

The employment of children under fourteen years of age in any mine, factory, workshop, or place of public entertainment and amusement was forbidden except in certain cases, when the county judge may license children over twelve years to work in such places.

An act abolishing the State board of supervision of the charitable, reformatory, and penal institutions, and the State Board of Charities and Reform, provides that the duties of these boards shall be discharged by a State board of control, created by the act, whose members shall be appointed by the Governor. The offices of State fish wardens and State game wardens were abolished and the enforcement of the fish and game laws intrusted to a State fish and game warden, to be appointed by the Governor. A State Board of World's Fair Managers was established, and the sum of \$65,000 appropriated for its use.

In addition to the regular annual tax of one eighth of a mill for the State University the levy was authorized for six years of an annual

tax of one tenth of a mill, the proceeds to be devoted to the construction, maintenance, and equipment of an armory and drill room, a building for the College of Law, and a building for practical instruction in dairying, and for such other improvements as the board of regents shall deem suitable.

The following sums were appropriated to the State charitable and penal institutions: To the State Hospital for the Insane, \$116,000; to the Northern Hospital for the Insane, \$150,000; to the School for the Deaf, \$74,000; to the School for the Blind, \$46,000; to the Industrial School for Boys, \$100,000; to the State Public School, \$95,000; to the State Prison, \$6,000. The total appropriations of the session for all purposes aggregated \$931,476.18.

An amendment to the State Constitution proposed by the Legislature of 1889 prohibiting special laws for the incorporation of cities was agreed to at this session, and provision was made for its submission to the people in 1892. Congress was memorialized to propose an amendment to the Federal Constitution providing for the election of United States Senators by direct vote of the people.

Other acts of the session were as follow:

Distributing the money received as a refund of the direct tax of 1861 among the various funds of the State treasury.

Providing a new law for the enforcement of liens on logs and timber.

To prevent deception in the sale and use of imitations of dairy products.

To prevent the peddling or distributing of election tickets in cities of 150,000 inhabitants or over.

Requiring the Insurance Commissioner to establish a form of fire-insurance policy to be used by all fire-insurance companies in the State.

To prohibit discrimination by life-insurance companies in favor of individuals, between insureds of the same class and equal expectation of life, in the amount of premiums charged.

To provide for the incorporation of trust, annuity, guarantee, safe-deposit, and security companies.

To enable religious and church corporations to form fire-insurance companies for the purpose of insuring church property.

To protect associations and trade unions in the use of labels and trade-marks.

To create a pension fund for members of fire and police departments in cities of over 100,000 inhabitants.

Amending the game laws.

Changing the law relative to the property rights of married women.

Appropriating \$50,500 for improvements at the Veterans' Home at Waupun.

To regulate the manufacture and sale of vinegar and to prevent its adulteration.

To provide for the organization of drainage districts, and for the construction, maintenance, and repair of drains, ditches, and levees.

To repeal all laws providing for the preservation and account of bullets.

Regulating the business of mutual, beneficiary, and fraternal corporations, societies, and orders providing insurance on the assessment plan.

To prohibit the sale, transportation, and packing of unwholesome, stale, or putrid meat or the flesh of diseased animals.

To prohibit the sale or giving of any cigars, cigarette, or tobacco to any minor contrary to the order of the parent or guardian.

To provide for the regulation of primary elections in counties having a population of over 100,000.

To prevent the smoking of opium.

Assenting to the act of Congress approved Aug. 30, 1890, appropriating money for the more complete endowment and support of colleges of agriculture and the mechanic arts in the several States.

Making 44 per cent. the minimum rate of interest on State trust funds.

Empowering married female lawyers to act as assignees, receivers, and court commissioners.

Permitting female lawyers to act as court commissioners.

Providing that when a man dies leaving no widow or minor children his homestead shall be subject to the payment of debts.

Authorizing a loan of \$150,000 to the State Agricultural Society with which to purchase fair grounds in Milwaukee.

Providing for the establishment of a sixth normal school.

Education.—The State University is one of the most successful institutions of its class in the United States. Its corps of instruction includes 62 professors and teachers, and its students during the year ending in 1891 numbered 1,097, divided among the several departments as follow: College of Letters and Science, 558; College of Mechanics and Engineering, 137; College of Agriculture, 67; College of Law, 118; School of Pharmacy, 56; Summer School, 131.

Charities.—The following figures show the number of insane in the asylums of the State on March 31: State Hospital, 513; Northern Hospital, 627; Milwaukee Hospital, 259; Brown County Asylum, 90; Columbia, 54; Dane, 101; Dodge, 104; Fond du Lac, 98; Grant, 103; Green, 84; Iowa, 103; Jefferson, 100; La Crosse, 106; Manitowoc, 99; Milwaukee, 120; Outagamie, 95; Racine, 102; Rock, 74; Sauk, 57; Sheboygan, 84; Vernon, 101; Walworth, 66; Winnebago, 70.

On the same date there were 184 pupils at the School for the Deaf, and 83 at the School for the Blind.

The number of inmates on Oct. 31 at the State Hospital was 523; at the Northern Hospital, 637; at the School for the Deaf, 176; and at the School for the Blind, 80.

Prisons.—On March 31 there were 536 convicts in the State Prison, 388 boys at the State Industrial School, and 273 children at the State Public School, at Sparta. On Oct. 31 the population at the State Prison was 530; at the Industrial School, 343; and at the State Public School, 283.

State Banks.—The following table presents a summary of the condition of the State banks on July 6, 1891, and Jan. 4, 1892:

ITEMS.	Jan. 4, 1892	July 6, 1891.
Capital	\$6,041,900 00	\$5,161,200 00
Deposits	33,523,302 16	37,304,842 15
Specie	1,104,970 26	1,156,209 74
Cash items	1,001,385 65	815,406 69
United States currency	8,089,254 01	2,283,961 57

The number of banks on the former date was 91, and on the latter date 104.

Agriculture.—According to the report of the Board of Agriculture there were raised in the State during the year 1891 13,543,000 bushels of wheat, on 966,128 acres, the value of the crop being about \$10,955,892. The corn crop was 29,718,000 bushels, raised on 1,113,842 acres, and

valued at \$13,076,017. The oat crop is reported at 49,348,000 bushels, raised on 1,481,419 acres, and valued at \$13,817,413.

Suits against ex-Treasurers.—For many years it has been the practice for each State Treasurer to deposit balances in his hands in certain banks, and to collect for his own use the interest thereon. This had been done by both Democratic and Republican Treasurers up to the present year, it being argued that, as the deposit was made at the Treasurer's own risk and not at the risk of the State, the person who took the risk, and not the State, ought to receive the benefit of the interest. In the political canvass of 1890 this question was considerably discussed, and it was generally agreed that the law should be so changed as to authorize and protect the Treasurer in depositing balances in his hands, and that the State should receive the accruing interest. The Democrats claimed that under the existing law the State had a right to the interest, and that former Treasurers had illegally converted it to their own use. Accordingly, after the election of November, 1890, the Democratic Attorney-General-elect announced that he should test the matter before the courts by entering suits against the living ex-Treasurers for a return of the interest. The first suit was begun against ex-Treasurer E. C. McFetridge, in February, 1891, and was soon followed by a suit against ex-Treasurer Henry B. Harshaw. In August similar suits were begun against ex-Treasurers Henry Baetz and Ferdinand Keuhn. The cases against McFetridge and Harshaw came to trial on Nov. 17 in the circuit court of Dane County, where the hearings occupied about two weeks. On Jan. 18, 1892, a decision was rendered in favor of the State, requiring the defendants to account for and pay over the interest received by them. An appeal was then taken to the State Supreme Court.

Political.—On April 7 a State election was held for a Justice of the Supreme Court to succeed Chief-Justice Orsamus Cole, who declined a re-election. Party lines were not drawn. There were two candidates, both Democrats, S. U. Pinney, who was nominated by a convention of lawyers, and E. S. Ellis, who was put forward by Democratic politicians, though not formally nominated. The people elected S. U. Pinney by a vote of 96,564 to 76,691 for E. S. Ellis.

WYOMING, a Northwestern State, admitted to the Union July 10, 1890; area, 97,890 square miles; population in 1890, 60,705. Capital, Cheyenne.

Government.—The following were the State officers during the year: Governor, Amos W. Barber (acting); Secretary of State, Amos W. Barber; Treasurer, Otto Gramm; Auditor, Charles W. Burdick; Attorney-General, Charles N. Potter; Superintendent of Public Instruction, Stephen T. Farwell; Chief Justice of the Supreme Court, Herman V. S. Groesbeck; Associate Justices, A. B. Conaway, Homer Merrill—all Republicans.

State Legislature.—The Senate consists of 12 Republicans and 3 Democrats; the House, of 25 Republicans and 7 Democrats.

Legislative Session.—An important act of the session was the one providing for the supervision and use of the waters of the State. It di-

vides the State into four water divisions: The first to consist of all lands drained by the North and South Platte and Snake (a tributary of Green river) rivers and their tributaries; the second, of lands drained by the tributaries of the Yellowstone and Missouri rivers north of the North Platte and east of the summit of the Big Horn mountains; the third, of lands drained by the Big Horn river and its tributaries; the fourth, of lands drained by the Green, Bear, and Snake rivers and the tributaries thereof, except Snake river, a tributary of Green river, and its tributaries. The Snake river of the fourth division is marked on the maps with a second name, the Shoshone. Each division is to have a superintendent, who shall report to the State Engineer, and the four constitute with him a board of control. Measurements and calculations are first to be made by the engineer for the discharge of streams, beginning with those most used for irrigation or other beneficial purposes. Facts are to be collected and surveys made to determine the most suitable locations for constructing works for utilizing the water of the State and to ascertain the location of the lands best suited for irrigation. The division superintendents are to make reports regarding the amount of water necessary to supply all the ditches, canals, and reservoirs of the districts, the amount actually coming into the district, whether it is on the increase or on the decrease, and what ditches, canals, and reservoirs are without their proper supply. If it shall appear that water is received by any one of these in any division of his district whose claim post-dates that of the ditch, canal, or reservoir in another district as ascertained from his register, he shall at once order the post-dated one shut down and the water given to the elder, his orders being at all times directed to the enforcement of priority of appropriation.

Other sections of the act provide for the determination of priorities of right, prescribe the method of adjudication in disputed cases, the method of action in cases of application from persons, associations, or corporations desiring to construct new distributing works or enlarge old ones; and the legal standard for the measurement of water, both for the purpose of determining the flow in natural streams and for distributing water therefrom, is made a cubic foot of water per second of time.

Some question having arisen as to the legality of the election of Sept. 11, 1890, as regards the county and precinct officers and their terms of office, the Legislature passed an act declaring that since the election was called by the Governor and the several boards of county commissioners, and the electors voted in good faith, it should be recognized as legal, and the terms of office of the county and precinct officers were prescribed.

The Columbian Exposition.—The Legislature, by an act approved Jan. 10, 1891, created a board of commissioners for the exposition, to consist of five members, one of whom should be the State Engineer. They were to hold office till Jan. 1, 1894, and to give bonds in \$5,000 each. An appropriation of \$30,000 was made for the expenses of the State exhibit, and it was provided that not more than \$10,000 should be drawn in each of the years 1891, 1892, and 1893

out of any funds in the State treasury for this purpose. The commission was authorized, if it should be deemed advisable, to erect a State building at a cost not to exceed \$10,000, or, if it should seem for the best interests of the State, to unite with some neighboring State in the erection of a building to be used jointly. And at the close of the exposition the commission is to have power to sell the building, or the interest of the State in the joint building, and return the money to the State treasury. The compensation of the commissioners was fixed at \$5 a day for time actually employed, and expenses necessarily incurred, provided that no public official should receive compensation further than his regular salary and his expenses.

The commission decided upon a separate building for the State, and had plans drawn for one to be built in 1892. These plans were the first to be approved by the exposition authorities. The exterior will be an imitation of stone. The interior will have a main hall 24 by 40 feet, with two offices on the first floor, and sitting and toilet rooms above. The furnishing of the building and the money required to arrange the collective display are expected to be provided by popular subscription. The exhibit of mining products and the like will include a great variety of specimens—gold, silver, copper, tin, iron, aluminum, sulphur, borax, soda, asbestos, graphite, kaolin, grinding, polishing, and lithograph stone, coal, coke, illuminating and lubricating oils, and natural gas. The commission expect to put on exhibition also specimens of tools for both placer and underground mining, machinery for mining and handling coal, and dumping, drawing, and ventilating apparatus, together with maps, models, and pictures to illustrate the mineral and geological deposits of the State. The Committee on Agriculture design to have, in addition to the specimens of their department, diagrams and plans of irrigation works and maps of irrigation districts. They also offer prizes for superior grains, grasses, and garden vegetables.

Irrigation.—A census bulletin issued in August gives the following figures concerning irrigation in Wyoming: There are 1,917 farms that are irrigated, out of a total number of 3,247. The total acres of land to these 4,917 farms is 1,508,850, upon which crops were raised by irrigation in the year 1890. In addition to the irrigation area from which crops were cut or gathered, there were approximately 240,000 acres irrigated for grazing purposes. The average of first cost of water right is \$6.62 an acre; and the average cost of preparing the soil for cultivation, including the purchase price of the land, is \$9.48 an acre. The average present value of the irrigated land of the State, including buildings, etc., is reported as \$31.20 an acre, showing an apparent profit, less cost of buildings, of \$10.50 an acre. The average annual cost of water is 44 cents an acre, which, deducted from the value of products, leaves an average annual return of \$7.81 an acre.

Indian Lands.—In October, the commission appointed by the Secretary of the Interior to negotiate with the Shoshone and Arapahoe Indians of Wyoming for a cession of a part of the Wind River reservation effected an agreement with the Indians, under which they cede to the

United States more than half their reservation, the Government getting about 1,100,000 acres, out of a total of about 2,000,000 acres. For the lands ceded the Indians receive \$600,000, or about 55 cents an acre. Of this amount, all but

a cash payment of \$50,000 will be put into funds for the benefit of the Indians, and the annual interest expended in the purchase and maintenance of an Indian cattle herd, in giving them irrigation ditches, schools, and other things.

X

XYLOPHONE, a musical instrument composed of strips of wood, whose sounds are determined by wooden hammers in the hands of the performer. The name by which it is known in Europe and America is derived from two Greek words meaning "wood" and "to sound." It is called *Strohfiedel* or "straw fiddle" and *Holzharmonica* in Germany, and *staccato* in Italy. It is of ancient origin, and is used in various modifications in many countries. In the usual modern instrument the strips of wood are of graduated lengths and thickness, according to the tone desired to be produced from each, arranged in regular succession from left to right, with their wider surfaces uppermost. They are made of ebony or other seasoned or hard woods, and are held in place by two parallel lines of interlaced or knotted cord, while they rest upon slender strips of bound straw laid horizontally for their support, or they are suspended within a box or frame for deeper resonance. If they are pierced and strung upon the cords it is done at a slight angle. The largest slip gives the lowest note, and is usually not the first note of the scale, but the fifth below, and the highest is three or more notes above the octave. The compass of the instrument can thus be varied to any extent. The mallets are small sticks tipped with balls. The xylophone was derived from the East, and is of great antiquity. It was known in China, in Siam, and to the Hebrews and the natives of Barbary, being still found in primitive use at Freretown, Mombase, on the eastern coast of Africa, composed of five large separate pieces of wood, each thinner at one end, and laid upon two strips of fresh banana wood resting on the ground, and their tones are produced by strik-

ing upon them with hollow short sticks. The natives call it the *marimba*, and it is known by this name also in Guatemala, Central America, where it is frequently seven feet long, with forty strips of hornego wood fastened with cords tightly stretched, with hollow tubes of varying length underneath them to produce more fullness of tone. The Guatemalan native player varies his instrument at will by inserting pieces of beeswax under the end of any piece of wood that may be defective in mellowness of tone. The *ravat-harmonicon* of Siam is the xylophone of that country, and in Japan it is the *mok-kine* instrument. The wooden strips are held with cords in the same manner as in the modern instrument, but are hung upon wooden frames shaped of planks, like an old-fashioned cradle for an infant. The xylophone is an evolution from the castanets of Asia Minor, the transition from which is natural and easy. The *Chinese king* was an upright frame with horizontal bars, from which the clappers were suspended by looped cord, and were struck with small mallets. The instrument used by the natives of Samoa is merely a movable wooden slat fastened to a board, on which they beat time with two sticks. The *gambang ganza harmonica* of Java has hollow cups of wood, or gourds, under the strips, to give depth of tone. It has two minor thirds not contained in the diatonic scale—from third to fifth, and sixth to octave. This scale is known in Asia as the pentatonic scale. The latest adaptation of the xylophone, called the metallophone, has thin strips of metal on frames of wood. The xylophone has been used by Lum-bave's orchestra, and Saint-Saens has introduced with it peculiar effects in his "Danse Macabre."

Y

YOUNG MEN'S CHRISTIAN ASSOCIATION. World's Conference.—The twelfth World's Conference of Young Men's Christian Associations met in Amsterdam, Holland, Aug. 18. Lord Kinnaird, of London, presided at the opening session, and spoke of the growth of the work of the associations on both sides of the Atlantic. Addresses were made by Mr. Paton, of London, and other speakers, on the training and development of voluntary workers. The question, "How may the Secretary get Young Men to enter the Work?" was discussed by Mr. Robert R. McBurney, of New York. Mr. Wishard, Secretary of the College Association, gave the results of his observations during a tour of three years and a half in the East with reference to the work of the associations, speaking particularly of the work in Japan, and of the needs of

India, China, and all Asia. Mr. Hyde Smith, of Australia, also spoke on this branch of the subject. Other special topics discussed during the sessions were: "The Bible in the Associations"; "The Work and Place of Secretaries"; "The Young Men's Christian Association in Roman Catholic Countries, and how to counteract the Difficulties which prevent their Development"; "The Attitude of the Association with regard to Socialism"; and "Spiritual Life in our Association; the Dangers that threaten it in our Actual Development; the Best Means of maintaining and increasing it, and for constantly recruiting Active and truly Converted Members." The members of the conference made an excursion to Nymegen on the Waal, and visited there the ancient heathen temple which Charlemagne converted into a place of Christian worship.

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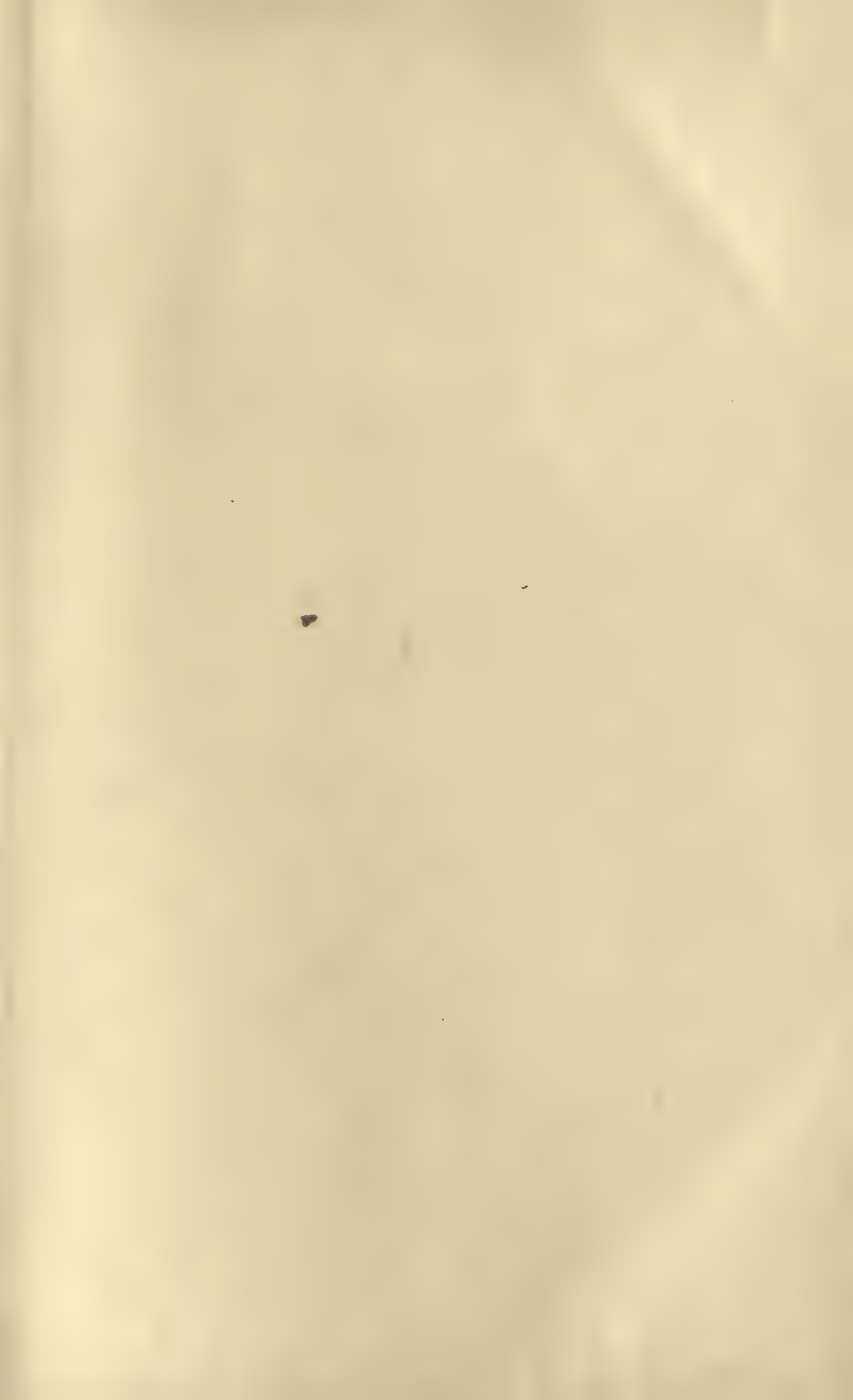
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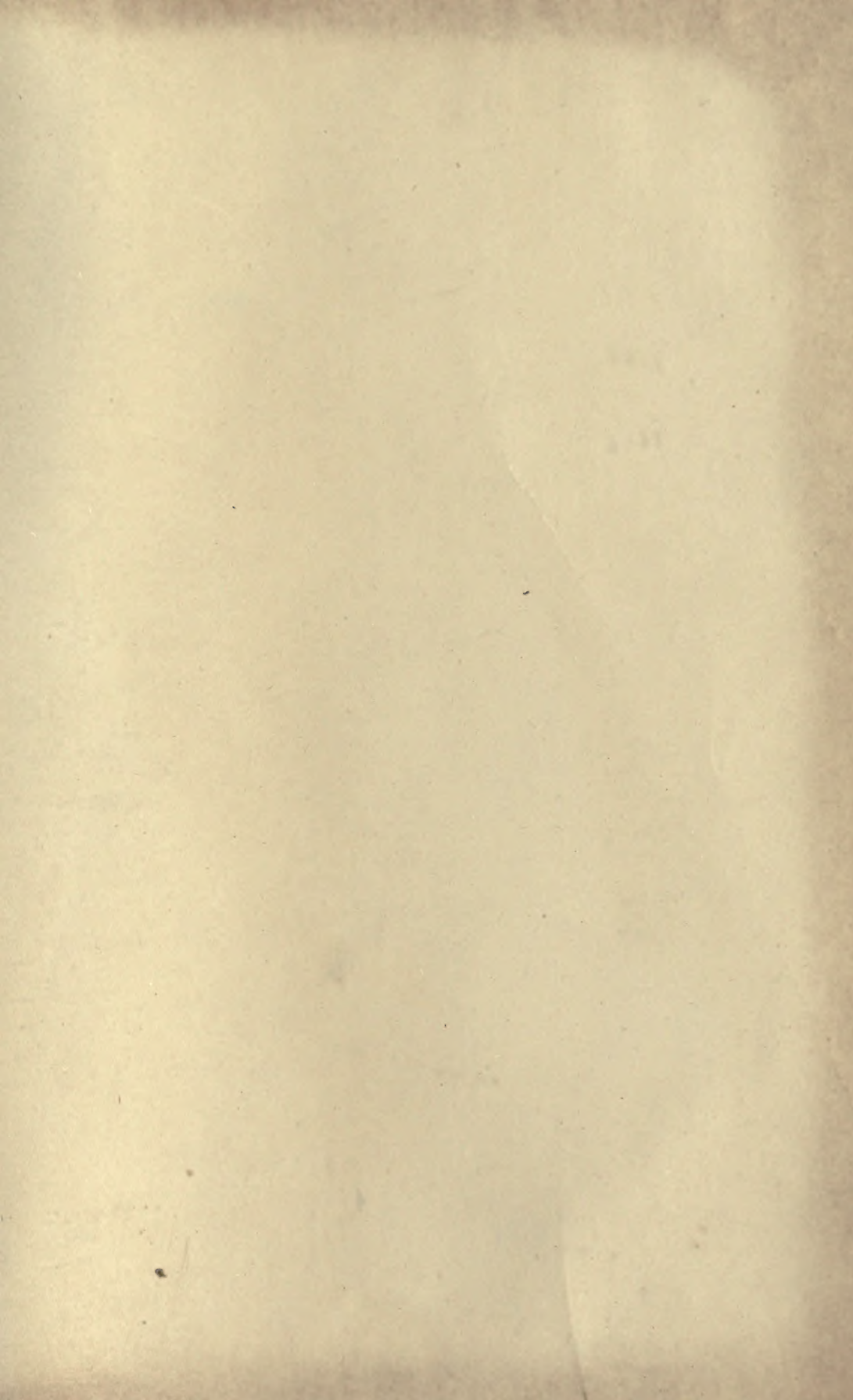
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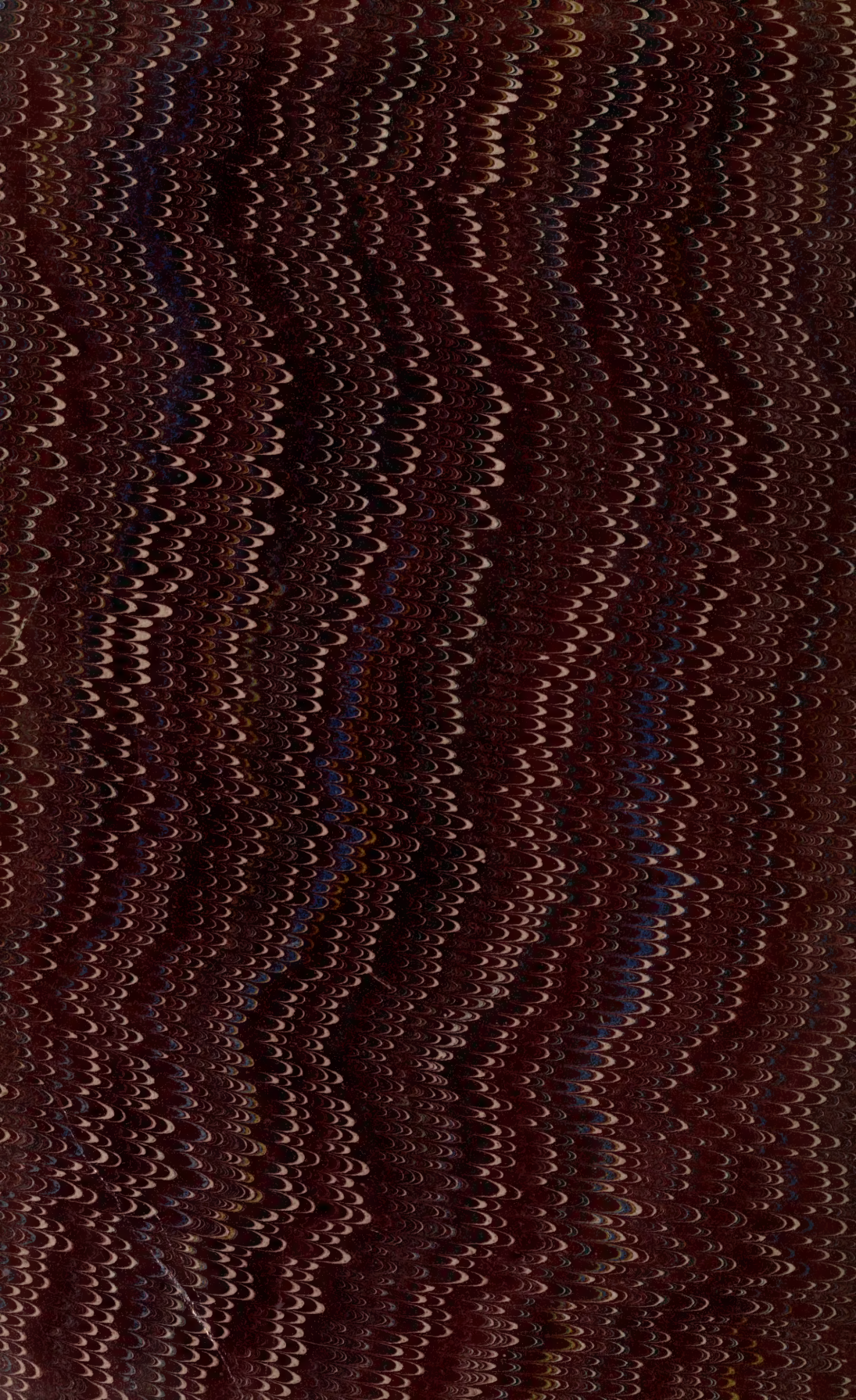
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